Visible Language 38.1

Special Issue

Cultural Dimensions of Communication Design Part 2

Cultural Dimensions of Communication Design makes another appearance, this time as Part 2. In it are two articles that couldn't be more different. One is centuries old while the other is contemporary; one is handmade while the other uses the latest technology. One was created within a closed cultural context and exists only for the initiate, while the other crosses cultural boundaries and attempts communication with many.

Yet both deal with communication that cross cultural boundaries and tax interpretive skills. The ancient one moves us across a time border with its own cultural implication. The contemporary one challenges us to understand the visual representation of different cultural values. Both have to do with systems of reading and hermaneutics and both dig beneath the surface of what is casually seen and understood.

The Mixtec Codex and international websites—crossing space and time—provide tension and perspective in this issue.

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A Visible Language Analysis of User-Interface Design Components and Culture Dimensions

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Visible Language 38.1
Marcus et al, 1-65

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Abstract

Bringing theory to practice, these authors apply the cultural dimensions of Geert Hofstede to international corporate web design. Against Hofstede's dimensions of power distance, individualism, gender bias, uncertainty avoidance and time orientation, five interface components are examined – metaphor, mental model, navigation, appearance and interaction. Through careful analysis and presentation of existing websites, cultural difference and similarity is revealed. Whether these differences can be explained by Hofstede's findings is an open question. The approaches of cultural analysis and interface component analysis bring to attention the complex decisions required in the construction of meaningful websites designed to cross borders.

Introduction

User-interface design and, within that discipline, website design, constitute a complex environment for visible language. This article addresses specific aspects of visible language related to culture. The primary goal of this article is to analyze websites in order to understand to what extent the corporate designs seem to exhibit variations that relate to cultural difference. Both visual syntax and visual semantics (especially rhetoric) are related to culture dimensions in relation to details in presentation.

Geert Hofstede's culture theory (Hofstede, 1997) establishes five dimensions of culture. Whether this theory is appropriate as an analytical framework for the following research became another focus for this investigation. Combining Hofstede's five dimensions (see below) with five components of user-interface design: metaphor, mental model, navigation, interaction and appearance (Marcus, 1997) provides twenty-five possible areas for evaluation if a website is localized appropriately. Many examples of this analysis follow.

Hofstede's cultural dimension

In this section we wish to summarize briefly Hofstede's cultural values and their relational scores. Each country's values are presented in table 1 in two ways: as a position in a ranking of all countries and as a score listing the particular value of that country. The table has five dimensions: power distance, individualism, masculinity, uncertainty avoidance and long term orientation regarding time. For example, looking at the extremes in power distance, one sees that Malaysia ranks first with the greatest power distance (score 104), while at the other extreme Israel ranks fifty-second (score 13). The reader is encouraged to examine Hofstede's work in greater detail in his book, *Cultures and Organizations: Software of the Mind, Intercultural Cooperation and Its Importance for Survival*.

Power distance (PD) refers to the extent (high or low) to which less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally.

Individualism (IDV) in cultures implies loose ties: everyone is expected to look after one's self or immediate family but no one else. Collectivism implies that people are integrated from birth into strong, cohesive groups that protect them in exchange for unquestioning loyalty.

Table 1 *Hofstede's Dimensions of Culture Index*

PDI *Power Distance Index* UAI *Uncertainty Avoidance Index*
UDV *Individualism Index* LTO *Long-Term Orientation Index*
MAS *Masculinity Index*

	PDI		IDV		MAS		UAI		LTO	
	rank	score	rank	score	rank	score	rank	score	rank	score
Arab Countries	7	80	26/27	38	23	53	27	68		
Argentina	35/36	49	22/23	46	20/21	56	10/15	86		
Australia	41	36	2	90	16	61	37	51	15	31
Austria	53	11	18	55	2	79	24/25	70		
Bangladesh									11	40
Belgium	20	65	8	75	22	54	5/6	94		
Brazil	14	69	26/27	38	27	49	21/22	76	6	65
Canada	39	39	4/5	80	24	52	41/42	48	20	23
Chile	24/25	63	38	23	46	28	10/15	86		
China									1	118
Columbia	17	67	49	13	11/12	64	20	80		
Costa Rica	42/44	35	46	15	48/49	21	10/15	86		
Denmark	51	18	9	74	50	16	51	23		
East Africa	21/23	64	33/35	27	39	41	36	52		
Ecuador	8/9	78	52	8	13/14	63	28	67		
Finland	46	33	17	63	47	26	31/32	59		
France	15/16	68	10/11	71	35/36	43	10/15	86		
Germany FR	42/44	35	15	67	9/10	66	29	65	14	31
Great Britain	42/44	35	3	89	9/10	66	47/48	35	18	25
Greece	27/28	60	30	35	18/19	57	1	112		
Guatemala	2/3	95	53	6	43	37	3	101		
Hong Kong	15/16	68	37	25	18/19	57	49/50	29	2	96
India	10/11	77	21	48	20/21	56	45	40	7	61
Indonesia	8/9	78	47/48	14	30/31	46	41/42	48		
Iran	29/30	58	24	41	35/36	43	31/32	59		
Ireland (Republic of)	49	28	12	70	7/8	68	47/48	35		

Israel	52	13	19	54	29	47	19	81		
Italy	34	50	7	76	4/5	70	23	75		
Jamaica	37	45	25	39	7/8	68	52	13		
Japan	33	54	22/23	46	1	95	7	92	4	80
Malaysia	1	104	36	26	25/26	50	46	36		
Mexico	5/6	81	32	30	6	69	18	82		
Netherlands	40	38	4/5	80	51	14	35	53	10	44
New Zealand	50	22	6	79	17	58	39/40	49	16	30
Nigeria									22	16
Norway	47/48	31	13	69	52	8	38	50		
Pakistan	32	55	47/48	14	25/26	50	24/25	70	23	0
Panama	2/3	95	51	11	34	44	10/15	86		
Peru	21/23	64	45	16	37/38	42	9	87		
Philippines	4	94	31	32	11/12	64	44	44	21	19
Poland									13	32
Portugal	24/25	63	33/35	27	45	31	2	104		
Salvador	18/19	66	42	19	40	40	5/6	94		
Singapore	13	74	39/41	20	28	48	53	8	9	48
South Africa	35/36	49	16	65	13/14	63	39/40	49		
South Korea	27/28	60	43	18	41	39	16/17	85	5	75
Spain	31	57	20	51	37/38	42	10/15	86		
Sweden	47/48	31	10/11	71	53	5	49/50	29	12	33
Switzerland	45	34	14	68	4/5	70	33	58		
Taiwan	29/30	58	44	17	32/33	45	26	69	3	87
Thailand	21/23	64	39/41	20	44	34	30	64	8	56
Turkey	18/19	66	28	37	32/3	45	16/17	85		
Uruguay	26	61	29	36	42	38	4	100		
USA	38	40	1	91	15	62	43	46	17	29
Venezuela	5/6	81	50	12	3	73	21/22	76		
West Africa	10/11	77	39/41	20	30/31	46	34	54		
Yugoslavia	12	76	33/35	27	48/49	21	8	88		
Zimbabwe									19	25

Adapted from Hofstede, Geert, *Cultures and Organizations: Software of the Mind: Intercultural Cooperation and its Importance for Survival*, McGraw Hill, New York, 1991, ISBN:0-07-029307-4.

Data and analysis are the intellectual property of Gert Hofstede. This is presented with his permission. Chart organization has been restructured to better communicate overall country profiles.

Masculinity (MAS) pertains to societies in which social gender roles are clearly distinct (i.e., men are supposed to be assertive, tough and focused on material success, whereas women are supposed to be more modest, tender and concerned with the quality of life). Femininity pertains to societies in which social gender roles overlap (i.e., both men and women are supposed to be modest, tender and concerned with the quality of life).*

Uncertainty avoidance (UA) can be defined as the extent (high or low) to which the members of a culture feel threatened by uncertain or unknown situations. Cultures vary in their avoidance of uncertainty, creating different rituals and having different values regarding formality, punctuality, legal-religious-social requirements and tolerance for ambiguity.

Long-term (time) orientation (LTO) plays an important role in Asian countries that have been influenced by Confucian philosophy over many thousands of years. Long- and short-term countries seem to divide between East and West. Hofstede concludes that Asian countries are oriented to practice and the search for virtuous behavior, while Western countries are oriented to belief and the search for truth.

* Hofstede assumes that countries with distinct gender roles clearly (and in his thinking that means men have a more powerful role within society than women) also value achievement and success very highly. The MAS category is somewhat controversial because two very different things are intermixed: the amount of gender differentiation on the one hand and the way a society thinks about toughness/competitiveness on the other.

User interface components (UI)

The five components of user interface design developed by the authors' firm (Marcus, 1997, 2003) are useful in all stages of development (planning, research, analysis, design, implementation, evaluation, documentation and training and maintenance.

Metaphors: Easy recognition and retention of fundamental terms, images and concepts.

Mental model: Appropriate organization and representation of data, functions, tasks, roles and people in organization of work.

Navigation: Efficient movement within the mental model through menus, dialogue boxes and control panels.

Appearance: How the product appears to the senses (look, sound, etc.) based upon identity and/or branding objectives.

Interaction: Effective input/output sequencing, including feedback.

Detailed visual analyses of specific website imagery uses some concepts from *Reading Images: The Grammar of Visual Design* (Kress & Van Leeuwen, 1996).

Method

Combining these two schemes from Hofstede and Marcus results in a five-by-five matrix that allows for twenty-five fields of interest to result.

An article by Marcus (Marcus, 2003) points out some implications of the dimensions for user-interface components. He apportions Hofstede's criteria to the field of user-interface design. To find out if these assumptions match with "real life" examples the authors examine localized websites.

For this analysis we tried to be as inclusive as possible (under limited conditions of time and funding) by choosing websites from three different continents (USA, Europe and Asia) including business-to-business websites for large corporations with sites in many countries, (*see table2*).

	USA	EU	Asia
Business	Sapient (SAP)	Siemens (SIE)	Hitachi (HIT)
	Peoplesoft (PEO)	SAP (SAP)	
Consumer	McDonalds (McD)	IKEA (IKE)	Sony (SON)
	Coca Cola (COC)	Mercedes (MER)	Mazda (MAZ)

Table 2

Key findings

The following matrix of cultural dimensions and user-interface components shows the findings of examples within the matrix. The abbreviations stand for the company's websites shown above and appear in the corresponding positions of the above matrix. (Note: examples do not appear in all of the matrix cells.)

Analysis of culture dimensions and user interface components

The following section discusses Hofstede's culture dimensions and within them user-interface components. For each component, visual examples from the selected websites appear to provide context and clarity for the text.

	PD			IDV			MAS			UA			LTO		
Metaphors		SIE	HIT		SIE					SAP	SIE				
				McD			McD				IKE				
											MER				
Mental Model	SAP		HIT		SIE			SIE			SIE			SIE	
				PEO											
					MER										
Navigation	SAP							SIE			SIE				
							McD			McD					
Interaction	SAP							SIE							HIT
	COC							MER							
Appearance		SIE		SAP							SIE			SIE	
	PEO														
							McD			McD					
							COC	MER							

Table 3

Power Distance (PD)

Metaphors

According to Hofstede, countries with a very high PD focus on expertise, authority and/or experts. Applied to the field of user-interface design and working with the term "metaphor," which refers to the basic concepts communicated through words and images, one can assume that visual metaphors in such high PD countries would show institutions, buildings or objects with a clear hierarchy. In table 4 we can see that the Netherlands (low PD) uses the eye-level portion of a person's face as a metaphor for the home "button," whereas Malaysia (high PD) uses the skyline of a city. The Netherland's picture is an "equal" look into the eyes of a person (neither upward or downward); Malaysia's view of a skyline represents official buildings. We can find a similar situation in table 5: both Australia and China show official buildings on their localized Hitachi websites. At the Australian (very low PD) website, the user looks at the building in a perspectively "equal" view. In addition, the walls of the building act as a kind of mirror, which implies the user is part of the scenery. The Chinese* website shows a (non-reflecting) building from a bottom-up view. This "worm's eye view" can be seen as a typical signal for power and authority (Kress & Van Leeuwen, 1996) that implies strong hierarchies.

Mental Model

Considering mental models, it seems likely that countries with a high PD prefer complex, highly organized, highly categorized, highly populated structures and reference data with little or no relevancy ranking. Countries with a low PD might prefer simple, informally organized and categorized structures and less structured data with some or much relevancy.

When analyzing the websites and looking at the mental model that was used, we looked at the website structure (sometimes referred to as the website map) as well as at the structure of the content on each page.

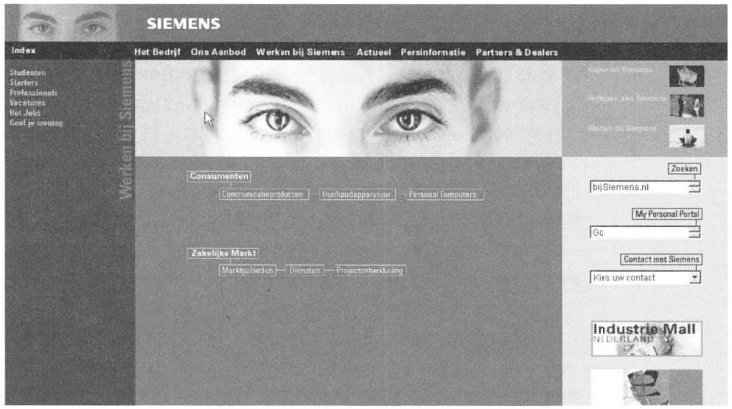
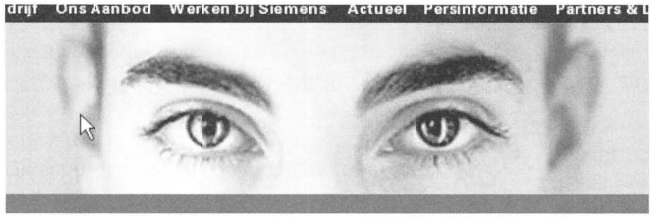
Netherlands (PD 38)	Malaysia (PD 104)
	
	
Metaphor for "Home": the face/the eyes of a person	Metaphor for "Home": an official building

Table 4 *Siemens website: personal images vs. offical buildings*

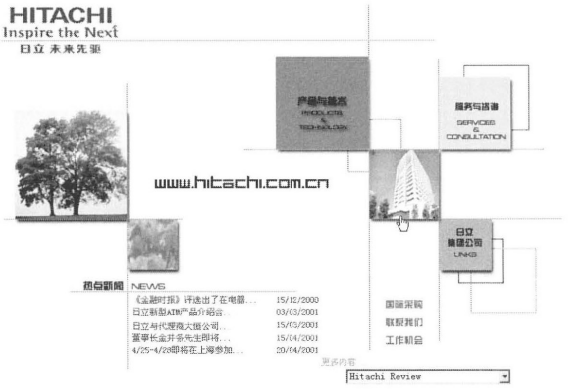
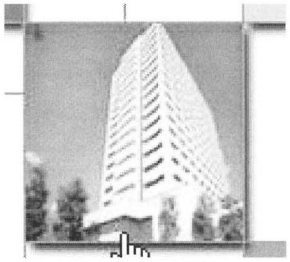
Australia (PD 36)	China*
	
	
Point of view: equal	Point of view: bottom-up

Table 5 *Siemens website: personal images vs. offical buildings*

*Hofstede does not provide a PD for China, but it is to be assumed that the PD of China, like the PD of all Asian countries, is higher than the PD of Australia.

We found one example that supports the theory of structure and relevancy and one that argues against it. The Hitachi website shows a contact page in Canada (low PD) that offers limited, but well-structured contact data. The Singapore website (slightly higher PD) offers much contact information on one page. As opposed to the Canadian contact page, the information on the Singaporean contact page is highly categorized (*see table 6*).

Canada (PD 39)	Singapore (PD 47)
	
Simple, informally organized and categorized structures	Highly Categorized

Table 6 *Hitachi website: amount of categorization*

Navigation

Regarding navigation through a user interface, and following Hofstede's research, we assume that low PD countries prefer open access, multiple options and sharable paths; whereas high PD countries have a higher use of authentication and passwords, and prefer prescribed routes and restricted choices.

Sapient websites support this theory. The careers frequently-asked-questions (FAQ) page from the German website (low PD) offers a variety of possibilities about how to apply for a job at Sapient. The same page within the Indian website (high PD) describes only one very restricted way to apply: the applicant must go through a standardized process by using the web job-search engine and a web form (*see table 7*).

Germany (PD 35)	**India (PD 77)**
Wie bewerbe ich mich um eine Stelle bei Sapient? *Senden Sie einfach Ihre vollständigen Bewerbungsunterlagen mit Lebenslauf, Foto und Zeugnissen an unsere Hiring-Teams in Düsseldorf oder München. Sie haben außerdem die Möglichkeit, sich per E-mail zu bewerben: Füllen Sie dazu unser Online-Bewerbungsformular aus oder senden Sie Ihre eigene elektronische Bewerbung an: Karriere@Sapient.com. Egal, wie Sie sich bewerben - wir bemühen uns um eine schnelle Bearbeitung und Sie werden bald wieder von uns hören.*	*How do I apply for a position at Sapient?* *Register now to set up your profile and apply for jobs right away, or search jobs now.*
How do I apply for a position at Sapient? Send your complete application with CV, picture and job reference to our hiring team in Düsseldorf or Münich. Furthermore you have the possibility to apply via email. Fill out the online form or send your own digital application to: Karriere@sapient.com. It does not matter, how you apply, we try hard for a quick handling and you will hear from us soon.	
Open access, multiple options	Restricted access and choices, prescribed routes

Table 7 *Sapient website: amount of options provided*

Interaction

Interaction in the field of user-interface design refers to input and output sequences, including feedback for the user, as well as larger-scale behaviorial aspects. The Coca Cola website provides a good example that feedback in low PD countries can mean "supportive error messages," whereas feedback in high PD countries contains severe error messages. Table 8 shows Denmark versus Malaysia. When one tries to login to the members' section and types in a wrong password, the error message is very polite (using words like "unfortunately, please..."), tries to give an overview of what went wrong and offers possible solutions by telling the user what to do. Exactly the contrary is true for the Malaysian feedback after a failed login: The expression "Bzzzzt!" is not really polite and does not explain what went wrong. The actual error message "wrong password!" sounds more like a stern scolding and the phrase "now for your next attempt..." does not guide the user to a possible solution and even sounds sarcastic.

The same is true for the comparison of the Austrian (low PD) and the Indian (high PD) website (*table 9*): The Austrian error message shows a clear indication of what is the case ("Login – error message") and tries to offer a solution for the problem by providing links. The Indian error message merely announces that there is something wrong and asks the user to try again.

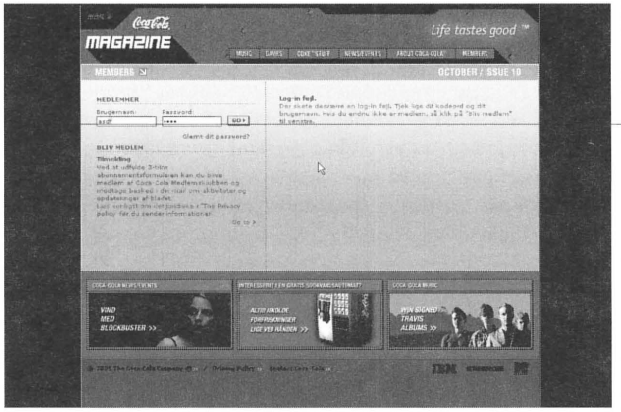
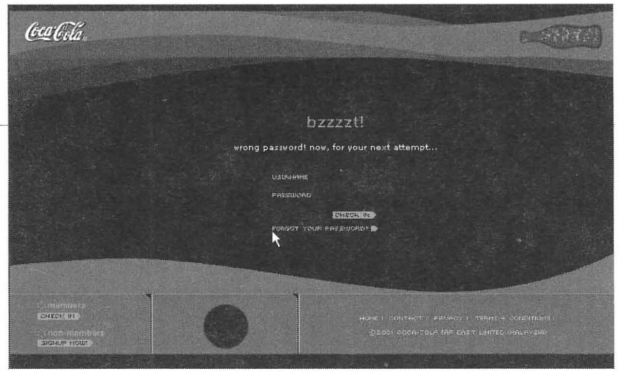
Denmark (PD 18)	Malaysia (PD 104)
	
Log-in fejl. Der skete desværre en log-in fejl. Tjek lige dit kodeord og dit brugernavn. Hvis du endnu ikke er medlem, så klik på "Bliv medlem" til venstre.	bzzzzt! wrong password! now, for your next attempt...
Log-in failed. *Unfortunately the login process failed. That has to do either with your nickname or your password. If you are not already a member, please click on "Become member" in the window at the left.*	*bzzzzt!* *Wrong password! Now, for your next attempt…*

Table 8 *CocaCola website: feedback language (continued on next page)*

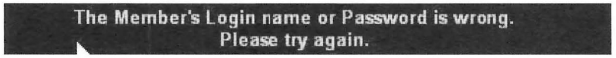
	Austria (PD 11)	India (PD77)
		
	Login error message	
	Attention, this nickname has not been registered in the community by now. Here you have a link to campaigns and community at www.coke.at. Did you forget your password? Click on: Forget password in the login section.	*The Member's Login or Password is wrong.* *Please try again.*
	Supportive error messages	Severe error messages

Table 9 *CocaCola website: feedback language*

Appearance

By applying Hofstede's research to visual appearance, one can assume that countries with low PD prefer that websites use "normal" people or groups; show daily activities; use popular music, symbols, typefaces, layouts and colors; and informal speech. Countries with high PD might use images of leaders, national/corporate/government themes, slogans, insignia, logos, symbols, typefaces, layouts and colors; official music or anthems and formal speech. We find supporting examples for this theory on the PeopleSoft website as well as on the Siemens website.

PeopleSoft uses a very unified page-layout system for their localized websites. The colors, fonts and grid for the content and navigation stay the same on all websites. However, the primary image on the front page varies from country to country. Comparing the front page of the UK (low PD) and the Singaporean (high PD) websites, we see an obvious difference (*table 10*): The UK page shows a group of three women working together with a laptop computer. The user watches the scene as if s/he were sitting at one table with the women.

United Kingdom (PD35)	Singapore (PD 74)
	
	
Three persons	One person
Women	Man
Asymmetric arrangement	Symmetric arrangement

Table 10 *PeopleSoft website: usage of imagery concerning PD*

The Singaporean page shows the picture of a man. We do not know if he is in fact a leader, but he could represent one. The picture is quite symmetrical; he is looking straight into the user's eyes.

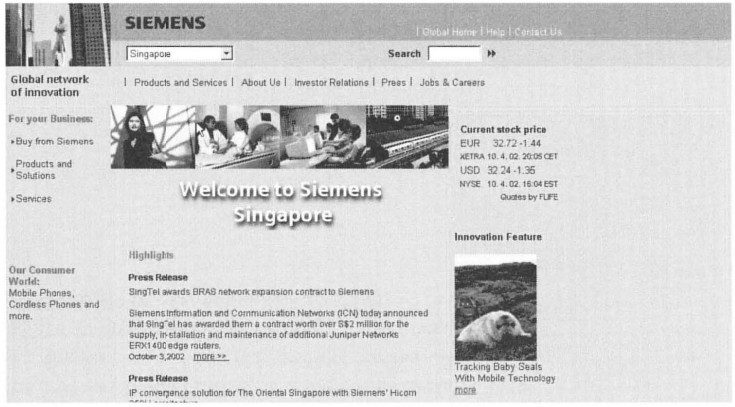
Comparing the usage of images on the Siemens website, we find a significant difference between The Netherlands (low PD) and Malaysia (high PD). As is visible in table 11, we find "normal, typical or average" people within the imagery of the Siemens website. They are enjoying life at the sea. The Malaysian website shows a much more cluttered imagery that combines four photographs into one, mixing shots with official websites, leaders and also "normal, typical or average" people.

A very strong supporting example is found by comparing the Italian localization of Siemens with the Singaporean (*see table 12*). The image used as a Home button in the upper-left corner shows a man and a woman in the Italian version, whereas the Singaporean website uses the picture of an official monument surrounded by Singaporean skyscrapers.

	Netherlands (PD 38)	**Malaysia (PD 104)**
Images of people		
Images of leaders, official websites		

Table 11 *Siemens website: average people vs. official leaders*

Italy (PD 50) | **Singapore (PD 74)**



Images of leaders official websites

Collectivism vs. Individualism (IDV)

Metaphors
When applying Hofstede's theory to the field of user-interface design, one can assume that metaphors used in low individualism countries might be relationship-oriented and content-oriented, whereas those in high individualism countries might be action-oriented or tool-oriented.

Comparing Brazil's (low IDV) corporate McDonalds website with the US (high IDV) in table 13 we can see how much more individualism is valued in the United States: we see the image of a single individual (one man) who represents the company. On the Brazilian website we see a mixture of group images to represent the company.

When looking at the metaphors used at the Siemens website (*table 14*), we find very relationship-oriented tools (a mobile phone stands for communication and the photograph of a man and a woman signals a relationship) on the Costa Rica (low IDV) website. France uses a bubble-blowing girl and ball-playing women, metaphors that focus not so much on relationships between people, but more on individualistic pleasure.

Mental Model
When considering the mental model of individualist countries, one can assume that the individual is supposed to be the most important part in such a model. Individualist countries therefore might use very product- or task-oriented mental models in which personal achievement is maximized, whereas collectivist countries might emphasize role-oriented models underplaying personal achievement.

The Mercedes Benz website (*table 15*) shows a typical example of how much individual choice is valued in the US: no other localized website of Mercedes Benz offers a section called "Owners Online," in which each owner of a Mercedes Benz auto can get an accounting of personalized information. The section also offers an application for the user to build her/his own vehicle. The website is very individual-oriented.

Brazil (IDV 38)	United States (IDV 91)
	
	
Images of groups to visualize the section "McDonalds in Brazil"	Images of a single person to visualize the "Corporate" section of McDonalds USA

Table 13 *McDonalds website: focusing on groups vs. focusing on individuals*

Costa Rica (IDV 15)	France (IDV 71)
 	 
Relationship related	Action oriented tools

Table 14 *Siemens website: relationship vs. action oriented*

To show individualist and collectivist approaches within text, we show an example of the PeopleSoft website (*table 16*). Comparing the Singaporean (low IDV) and the German (high IDV) "About PeopleSoft" sections, we find a significant difference regarding emphasis of personal achievement: Singapore's website speaks about the role the company plays in the world's economy, the employees and partners are mentioned and they talk about how PeopleSoft can help its customers. The German website simply mentions when the company was founded, where it is located and emphasizes the CEO, who is mentioned by name.

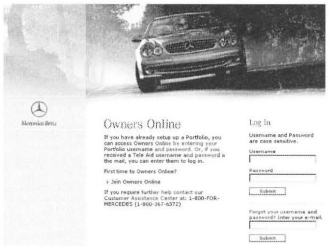
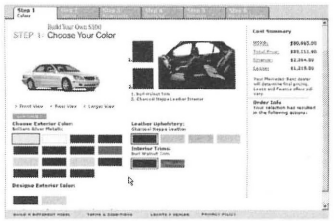
Other countries	USA (IDV 91)	
No such section available		
		
		*Offers an application for the user to build her/his own car.*
	Very individual oriented	

Table 15 *Mercedes Benz website: targeting the individual*

Singapore (IDV 20)	Germany (IDV 67)
About PeopleSoft: *(1st paragraph of page)* *Established in 1987, PeopleSoft is the world's leading provider of application software for the real-time enterprise. More than 4,800 organisations in 140 countries use PeopleSoft pure Internet software to reduce costs and increase productivity by directly connecting customers, suppliers, partners and employees to business processes on-line, in real time. PeopleSoft's integrated, best-in-class applications include Customer Relationship Management, Supply Chain Management, Human Capital Management and Financial Management.*	***About PeopleSoft:*** *(1st paragraph of page)* *Die PeopleSoft GmbH wurde 1995 gegründet. Die Hauptniederlassung befindet sich in München. Geschäftsführer ist Stefan Höchbauer.* *Wegbeschreibung*
	Translation: *PeopleSoft GmbH was founded in 1995. The headquarters is located in Munich. CEO is Stefan Höchbauer.* *Directions*
Personal achievement is underplayed	Personal achievement is maximized

Table 16 *PeopleSoft website: personal achievement*

The Sapient website (*table 17*) shows a similar pattern: on the Careers page, the company tries to find new employees. The Indian (low IDV) page therefore uses three sentences and very collectivist speech by emphasizing collaboration and using the word "shared" very often especially in the very beginning of the text. In the US (high IDV) version of the text, we find a more I/we related text that uses hyperbolic structures to emphasize the value of the company itself.

There is one more supporting example on the Siemens website (*table 18*). The wording of items also reflects mental models: Costa Rica (low IDV) chose "The Company" for naming a section; the same section is called "Our Products" in France (high IDV). This example would argue for the role-oriented approach in collectivist countries on the one hand and the more product and task oriented approach in individualistic countries.

India (IDV 48)	USA (IDV 91)
*Driven by a passion for creating value in an environment of **shared** ideas, **shared** efforts, and **shared** responsibilities, we are here to shape the future of business and technology consulting.* *For those who **share** the same attitude, we offer aggressive and flexible career paths, exposure to the latest technologies, global travel, world-class infrastructure and an attractive compensation package. In addition, **you** will have the opportunity to **work with** India's best professionals and collaborate with Sapient teams/Fortune 1000 clients worldwide.*	*The world needs a better kind of consulting, and we're on a mission to deliver it. The work we do requires a certain type of person – passionate about raising the bar on what's possible and focused on doing whatever it takes to **help our clients** succeed. These are the qualities that drive us, qualities that point to a company bent on delivering value and impact.* *We've built our reputation by giving our clients what we say we will, when we say we will. We do it in an environment of **shared** ideas, **shared** efforts, and **shared** responsibilities, and in an atmosphere of openness that recognizes each individual's need to grow professionally.*
3 sentences. More collectivistic speech (emphasis); the "shared"-clause is located much more on the top than in the US version. Emphasis on collaboration.	5 sentences, more I/we related speech (emphasis); hyperbolic speech

Table 17 Sapient website: We vs. I

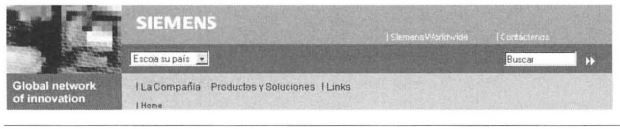
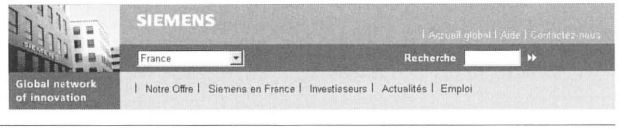
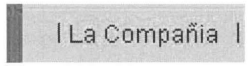
Costa Rica (IDV 15)	France (IDV 71)
	
The Company	*Our Products*
	
Role oriented	Product and task oriented

Table 18 *Siemens website: role-oriented vs. product-oriented*

Femininity vs. Masculinity (MAS)

Metaphors
Comparing the Finish (low MAS) with the Austrian (high MAS) McDonalds website (*table 19*), we find a metaphor on the front page that supports the idea of low MAS countries focusing on family and shopping, whereas high MAS countries prefer sports- and competition-oriented approaches.

Mental Model
When applying Hofstede's assumptions about Femininity and Masculinity to the component of mental models, we can assume that we will find social structures in low MAS countries and work/business structures in high MAS countries. We also might expect detailed views and relationship-oriented approaches in low MAS countries, whereas we might find high-level, "executive views" and goal-oriented approaches in high MAS countries.

Finland (MAS 26)	Austria (MAS 79)
	
Family oriented	*Competition oriented*
On the start screen of the Finnish website one can find more emphasis on products, shopping and family related imagery.	The Austria McDonalds website offers right at the start screen a competitive game.

Table 19 *McDonalds website: family vs. competition*

The Siemens website (*table 20*) supports this theory: Whereas the Norwegian (low MAS) Careers page focuses on social structures and is very relationship-oriented (the main sections are entitled "What we are looking for" and "What we can offer"), the Austrian page (high MAS) emphasizes the quality of the company and the possibilities an employee has for advanced education, which seems quite goal-oriented.

Navigation

The contact page of the Siemens website (*table 21*) offers multiple choices in Sweden (low MAS) and only one possibility to contact the local company in Japan (high MAS). This example supports the theory that low MAS countries would prefer multiple choices and multi-tasking, or polychronic approaches, whereas high MAS countries would prefer limited choices and synchronic approaches.

Norway (MAS 8)	Austria (MAS 79)
	
What we are looking for *What we can offer* *Jobs and Careers* *Interning*	*Why Siemens* *Job search* *Career News* *Training / Education* *Students* *Postgraduates* *Professionals*
Social structures relationship-oriented	Work / business structures goal-oriented

Table 20 *Siemens website: social orientation vs. personal goals*

Sweden (MAS 5)	Japan (MAS 95)
	
Multiple choices: Many possibilities	Limited choices: only one possibility – write an email

Table 21 *Siemens website: amount of choices offered*

Interaction

Regarding interaction, one can assume that countries that range high in masculinity prefer game-oriented, mastery- and individual-oriented approaches. For countries, in which one does not focus so much on gender differentiation and competitiveness, one would expect somewhat less of these approaches and more practical, function-oriented approaches.

The McDonalds website (*table 22*) is an example that supports this assertion: The Swedish (low MAS) website focuses on the client service by providing many ways to get into direct contact with the company. On the Austrian (high MAS) website, it is much easier to find the fun and games section than contact information. The fun section contains technical content such as screensavers and wallpapers, a link to send an e-card and a score-based game. A client service section is not available on the Austrian website.

Another supporting example is found at the Mercedes Benz website (*table 23*). There we find a very supportive search text on the Netherlands (low MAS) website, that also offers a practical

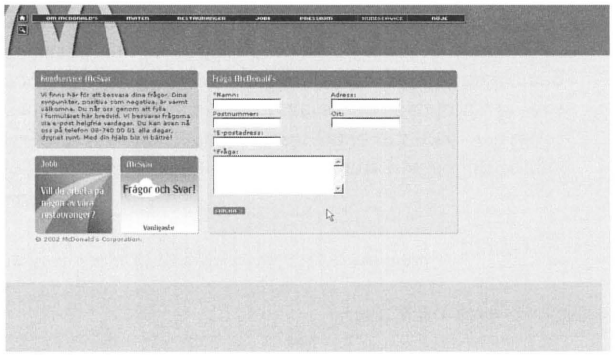
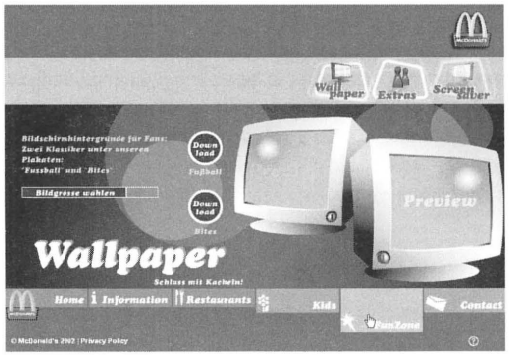
Sweden (MAS 5)	Austria (MAS 79)
	
Client service section much more prominent than gaming section, direct contact possible	*Fun section that offers wall paper, extras and screen savers. No client service section*
Practical, function-oriented	Game-oriented, technical content

Table 22 *McDonalds website: practice-oriented vs. game-oriented*

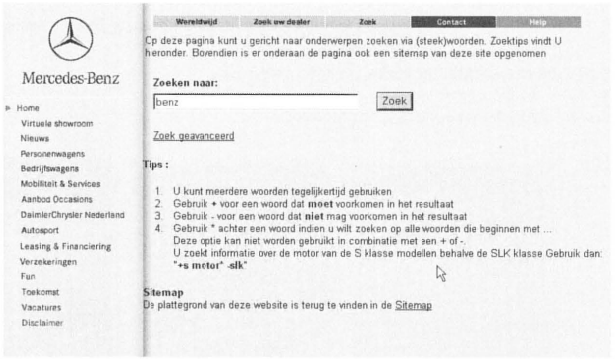
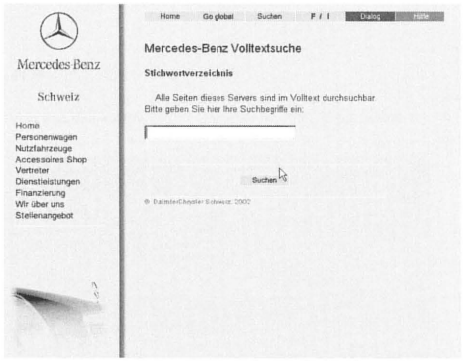
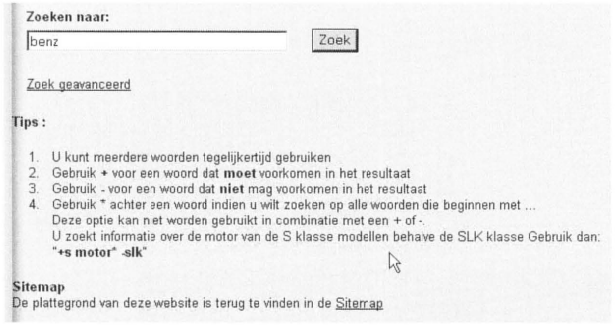
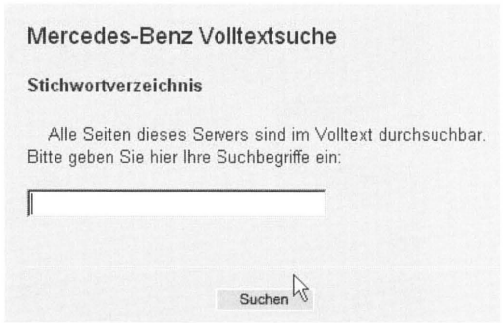
Netherlands (MAS 14)	Switzerland (MAS 70)
	
	
Many tips and help items, added link to sitemap	*No tips, just a short explanation of what to do*
Practical, function-oriented	

Table 23 *Mercedes Benz: usage of supporting help text*

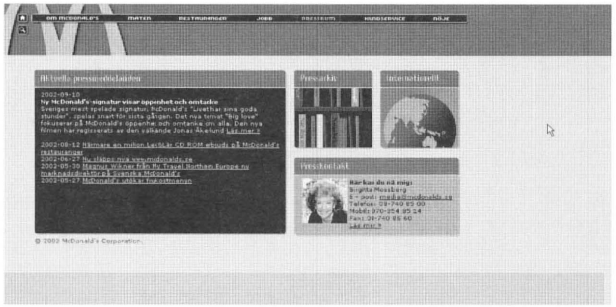
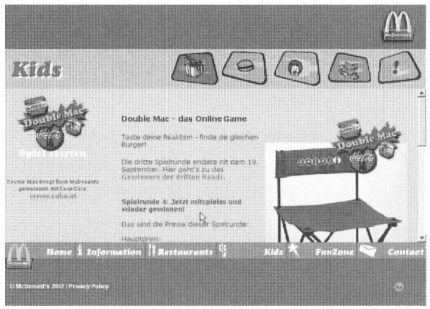
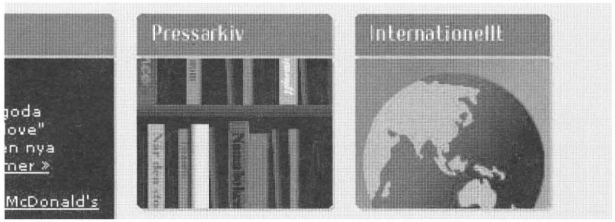
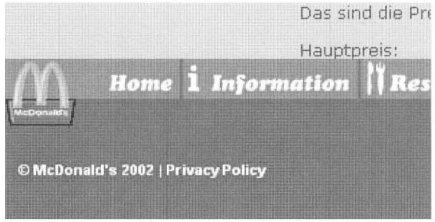
Sweden (MAS 5)	Austria (MAS 79)
	
	
Rounded soft-shades edges, warm colors	*Hard edges, more impact on technical appearance*
"Feminine" colors, shapes, acceptance of cuteness	"Masculine" colors, shapes

Table 24 *McDonalds website: usage of colors and shapes*

link to the sitemap. On the search page of Switzerland's (high MAS) localized version, there is only a short notice on what a user must do, but there is no supportive help text.

Appearance
In countries with a low MAS index one would expect harmonious colors and shapes. We can find examples for this expectation in the following websites.

McDonald's (*table 24*) Swedish (low MAS) page has rounded soft-shaded edges and warm colors whereas the Austrian (high MAS) page is designed in much "tougher," i.e., more saturated colors. The design approach of the Swedish website seems to be more subtle and elegant than the Austrian. Moreover the Austrian website uses Flash as the only technical implementation base (technically quite elaborate) and therefore forces the user to encounter technically a browser plug-in. The Swedish website uses Flash just as an add-on to the main website, which is implemented in HTML.

Comparing the Danish (low MAS) website of CocaCola (*table 25*) with the Italian (high MAS) website, we also find an argument for this interpretation. Denmark uses a very harmonious, relationship-oriented picture of a young couple. It may not be a coincidence that both persons look quite androgynous: low MAS countries do not emphasize gender differences. In other words, it is less important if the couple is a heterosexual or a homosexual one; the image is straightforwardly about harmony between people. The Italian page welcomes the user with the sound of a racing car, a very masculine connotation and reference to a competitive sport.

Although the Mercedes Benz website (*table 26*) is very similar in all the localized websites, we find a major difference in the design between Sweden (low MAS) and Germany (high MAS). The visual design approach from Sweden uses softer edges and shapes than the German approach. The German layout focuses more on clear structure and avoids any kind of cuteness.

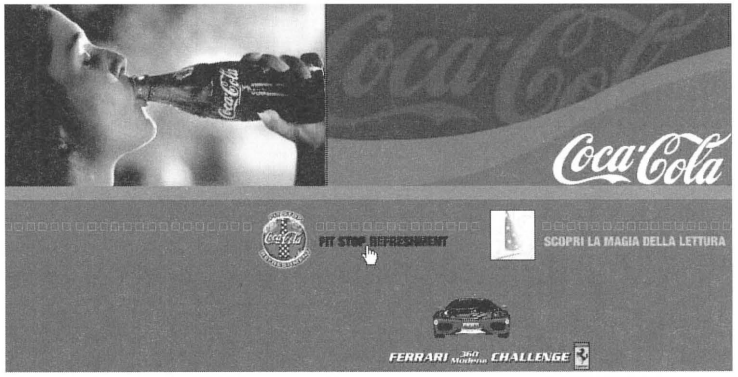
Denmark (MAS 16)	Italy (MAS 70)
	
	
Harmonic imagery	*Car and car sound on the entry page*
Acceptance of cuteness, harmony	"Masculine" sound, competition

Table 25 *CocaCola website: usage of imagery (harmony vs. competition)*

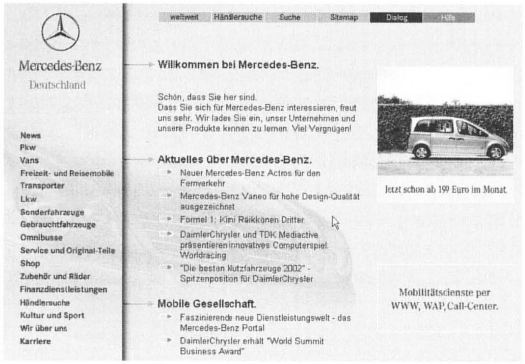
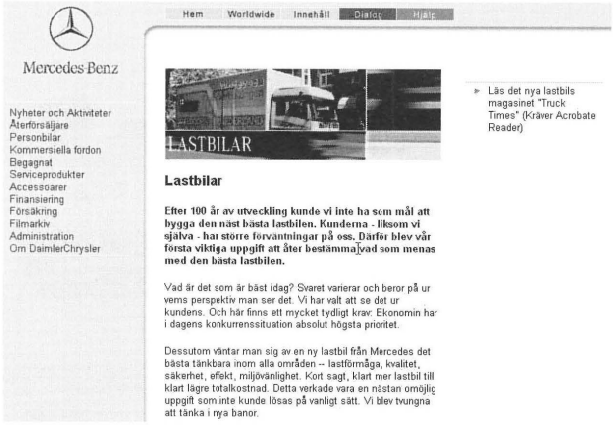
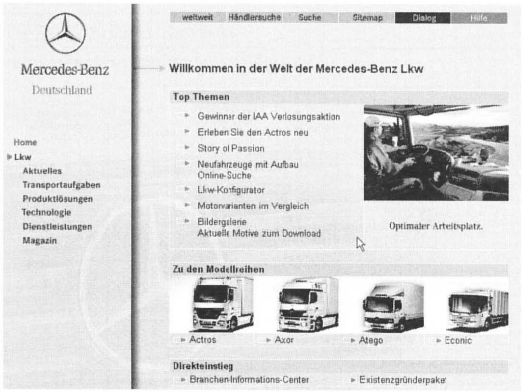
Sweden (MAS 5)	Germany (MAS 66)
	
	
Softer edges and shapes	Clear structure, no cuteness

Table 26 *Mercedes Benz website: usage of "soft" design*

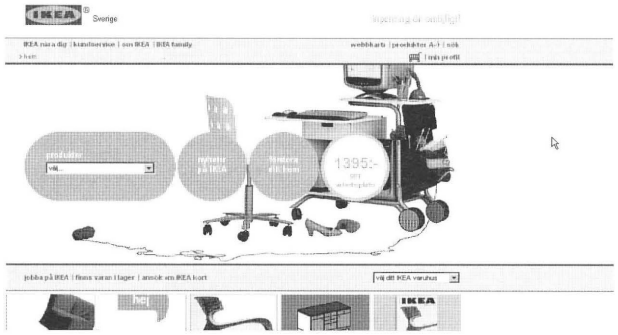
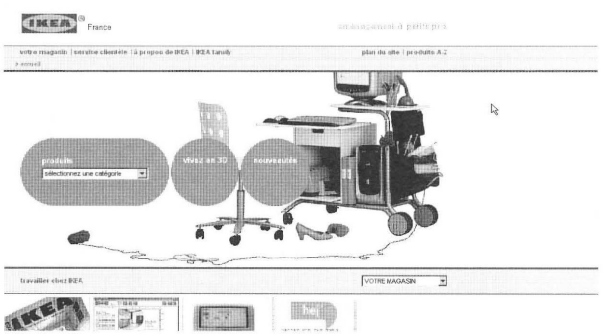
Sweden (UA 29)IKEA	France (UA 86)
	
Tagline: Ingenting är omöjlig	*IKEA Tagline: Aménagement à petit prix*
Nothing is impossible	*Design at (a) small (low) price*
abstraction	representation

Table 27 *IKEA website: textual uncertainty avoidance*

Uncertainty Avoidance

Metaphors

Applying Hofstede's theory about uncertainty avoidance to the user interface component of metaphors, one can assume that countries with low uncertainty avcidance would not shun and might prefer novel, unusual references and abstraction, whereas cultures with a high amount of uncertainty avoidance would ask for familiar, stable and clear references to daily life and its representation instead of abstraction.

Table 27 and table 28 show two good examples to support the theory. IKEA is a European furniture store that is known for its casual, easy-going advertisement style and its low prices. The Swedish (low UA) website uses the slogan "Nothing is impossible," which is quite ambiguous. The French (high UA) website uses the very specific slogan "Design at (a) small(low) price." We can find a similar situation at the Sapient website: all websites localized for countries with a UA under 65 use the slogan "Making Technology Matter," which is not very specific. Italy and Japan score high on the UA scale and use the more precise text "Designing Technology Humans Can Use."

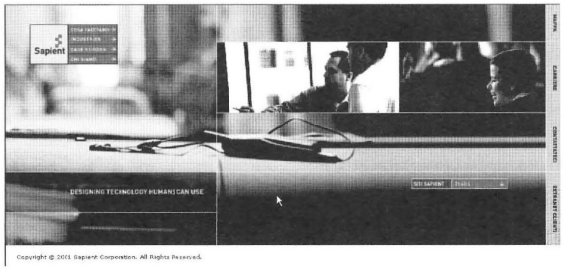
US (UA 46), Canada (UA 48), India (UA 40), Germany (UA 65), UK (UA 35)	Italy (UA 75), Japan (UA 92)
	
Tagline: MAKING TECHNOLOGY MATTER	*Tagline: DESIGNING TECHNOLOGY HUMANS CAN USE*
Abstraction	Clear reference to daily life

Table 28 *Sapient website: abstraction vs. clear reference to daily life*

The same pattern holds not only for textual elements but for imagery. When comparing (*table 29*) the British (low UA) and the Belgian (high UA) websites, we can find pictures that act as metaphors. The UK website shows a very dynamic photo of unidentifiable technical objects and the slogan "Welcome to SIEMENS in the UK" which is an abstract representation of the company. The Belgian website shows a variety of pictures with references to daily life. They act as representations. Put side-by-side, the service section of Mercedes Benz (*table 30*) in the localized version for Singapore (low UA) and for Japan (high UA), shows a comparable situation: Singapore focuses on the relationship (Singapore has a low IDV value) and therefore abstracts the service by showing a sales person serving a client. Japan shows a mechanic actually working on the motor of the car.

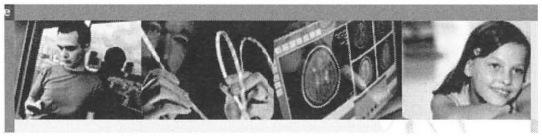
United Kingdom (UA 35)	Belgium (UA 94)
	
	
Novel, unusual references, abstractions	Familiar, clear references to daily life, representations

Table 29 *Siemens website: abstraction vs. representation*

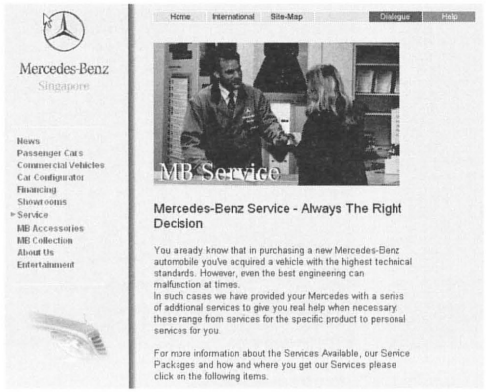
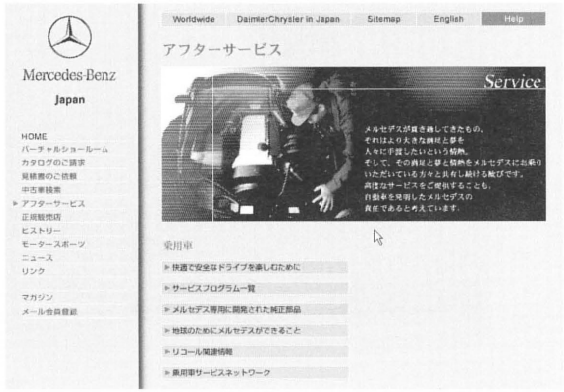
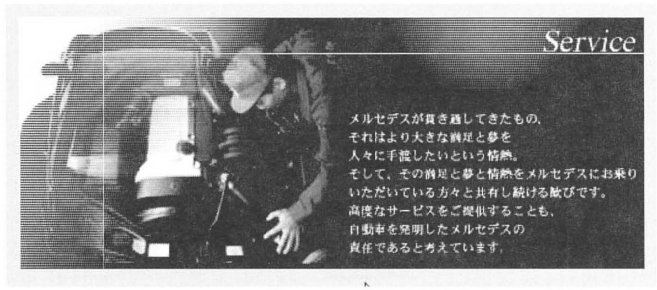
Singapore (UA 8)	Japan (UA 92)
	
	
Abstraction	Representation

Table 30 *Mercedes Benz website: abstraction vs. representation*

Mental Model

Because the mental model and navigation are closely related (structure and process), these are affected similarly and are considered together in this next set of examples.

Considering the mental model, we can expect tolerance for ambiguousness, implicit structures or relations, complexity and fuzzy logic in countries with low uncertainty avoidance. Conversely, we can expect simple, explicit, clear articulation; limited choices and binary logic in countries with high uncertainty avoidance.

Navigation

As stated above, the components of mental model and navigation are considered together as they react similarly based on the previous description of expectations.

Both Switzerland and Belgium, are multilingual countries. When a user enters the Siemens website (*table 31*) of Switzerland (low UA), it is possible for her/him to chose among languages, but it is also possible to directly access several provided links. The Belgian website offers a more binary logic: a user always must decide at the beginning in which language s/he wants to

Switzerland (UA 58)	Belgium (UA 94)
	
Fuzzy logic: User can chose languages but also dive directly into the website	Binary logic: User must choose language before entering content

Table 31 *Siemens website: fuzzy logic vs. binary thinking*

explore the website. Not until this is done can s/he navigate deeper into the mental model of the website.

Table 32 shows a similar situation: the Belgian (high UA) McDonalds website provides a highly redundant navigation (the icons are text-labeled and appear both in the navigation area and in the content area), whereas the British (low UA) website offers a non-redundant navigation: the icons appear only once on each page.

Another example can be found at the Siemens website (*table 33*). The British (low UA) website has a quite unclear structure in the Jobs section. Windows that pop up at full window size, do not clearly indicate that the user is now in a different section/window. The Belgian (high UA) also offers a pop up module in the job section, but the indication is very clear, because the window is started in a smaller mode and the choices are limited. The same is true for the News section on the front page (*table 34*): the British page offers a permanent moving news ticker that shows dozens of information bits in a minimum of time. The Belgian news section is static and remains the same on the entire website.

Appearance

Considering the user interface component of appearance, one can assume that countries with low uncertainty avoidance (UA) may prefer, or at least accept, more varied, ambiguous, less-consistent imagery, terminology and sounds. We may expect tolerance for more perceptual characteristics involved in purely ornamental or aesthetic use and less redundant coding of perceptual cues. Countries with a high UA may prefer simple, clear, and consistent imagery, terminology and sounds. The users may expect highly redundant coding of perceptual cues.

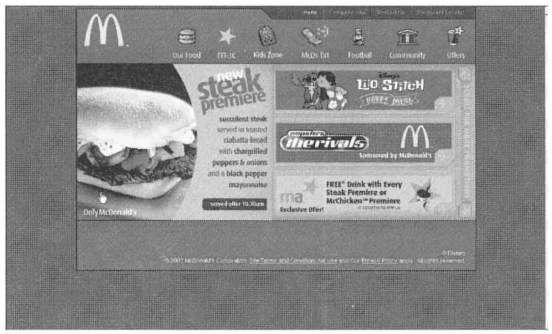
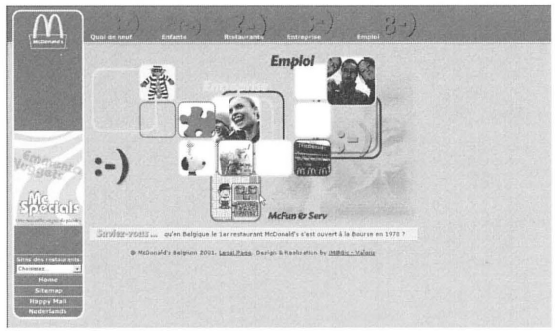
United Kingdom (UA 35)	Belgium (UA 94)
	
	
No redundant coding – items appear only once	Highly redundant coding

Table 32 *McDonalds website: use of redundancy*

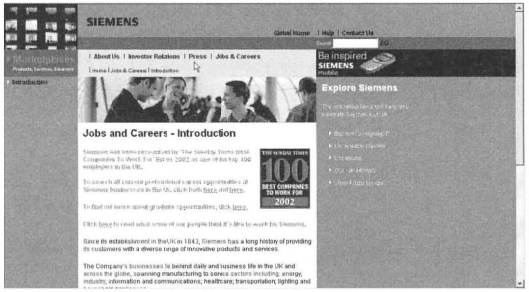
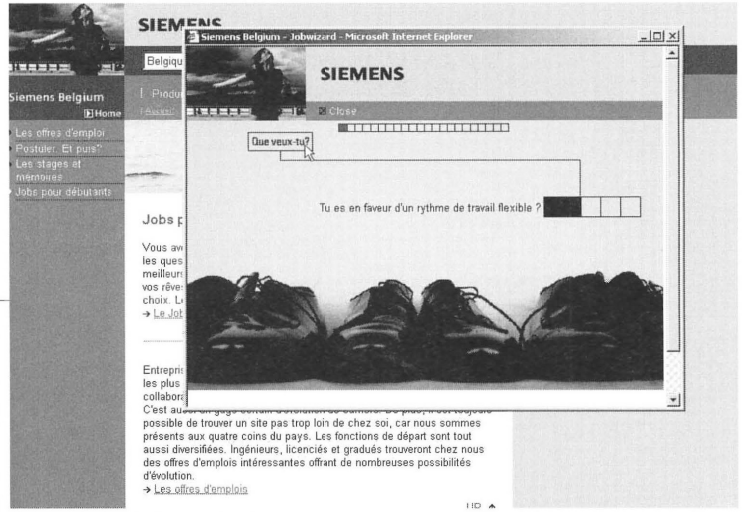
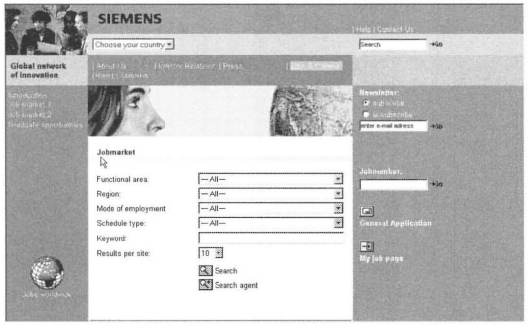
	United Kingdom (UA 35)	Belgium (UA 94)
Unclear structure, windows popping up not indicated clearly		
		*Pop up window indicated clearly, clear structure*
	Complexity	Limited choices

Table 33 *Siemens website: complexity vs. limited choices*

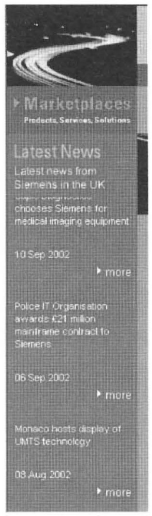
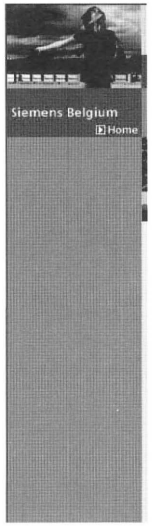
United Kingdom (UA 35)	Belgium (UA 94)
Permanent moving news ticker offering dozens of information bits 	 *Static menu, remaining the same on the whole website*
Multiple options	Limited options

Table 34 *Siemens website. amount of options provided*

Again, we can find an example corroborating these assertions by comparing the UK (low UA) with Belgium (high UA). At the McDonalds website (*table 35*) we find navigation that uses quite inconsistent icons throughout the website. The icons used on the Belgian website are consistent to a much greater extent.

Likewise, the imagery on the Siemens website is much more consistent and redundant on the Belgian website than on the British website (*tables 36 and 37*).

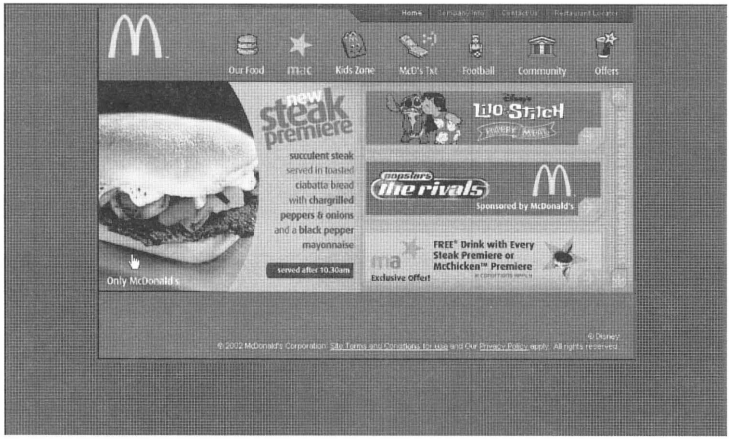
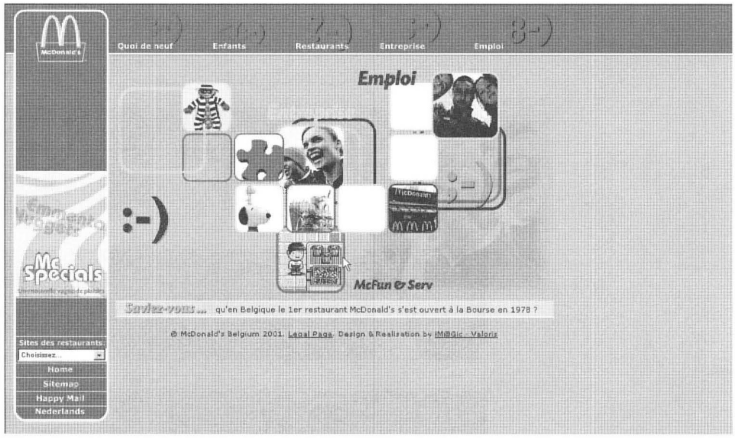
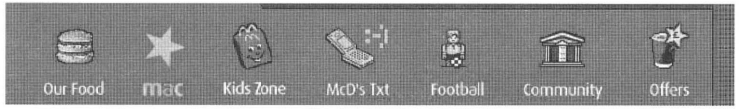
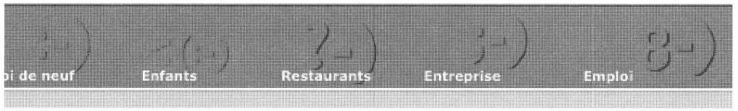
United Kingdom (UA 35)	Belgium (UA 94)
	
	
Less consistent imagery	Consistent imagery

Table 35 *McDonalds website: usage of consistency*

Long- vs. short term (time) orientation (LTO)

Mental Model
Hofstede's theory seems to imply that long-term, time-oriented countries would more actively pursue the long-term perspective.

The following example (*table 37*) shows the difference in mental model concerning long-term time orientation: Pakistan (low LTO) mentions in this text on the Siemens website the size and locations of the company. China (high LTO) focuses on the long-lasting history of the company.

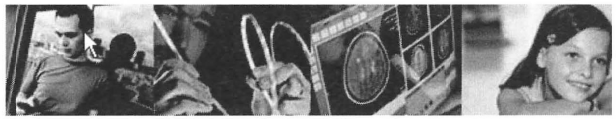
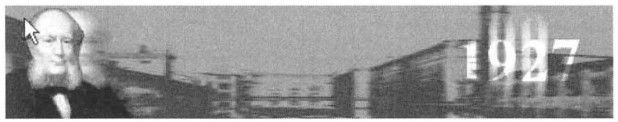
United Kingdom (UA 35)	Belgium (UA 94)
	
	
	
Varied, ambiguous, less consistent imagery	Simple, clear, consistent imagery

Table 36 *Siemens website: variety vs. consistency*

Interaction

Regarding interaction in short-term, time-oriented countries we can assume that distance communication is accepted as more efficient, and therefore, anonymous messages are tolerated more. Inhabitants of long-term, time-oriented countries may prefer face-to-face communication, harmony, and to achieve that harmony, personalized messages.

We find an example of this pattern at the Hitachi website (*table 38*). The US (low LTO) website offers a contact page on which the user just can find a web form to place a message. At the Singaporean (high LTO) website, we find a web form as well as personal contact information. The personal information is positioned at the top of the page, so it seems more likely that the user selects this personal form of communication.

Pakistan (LTO 0)	**China (LTO 118)**
Siemens Pakistan Engineering Co. Ltd., with headquarters in Karachi and two regional branches in Lahore and Islamabad, is one of the largest international companies in Pakistan.	*Siemens co-operation with China began in 1872.*
Emphasis on size	Emphasis on history

Table 37 *Siemens website: importance of time*

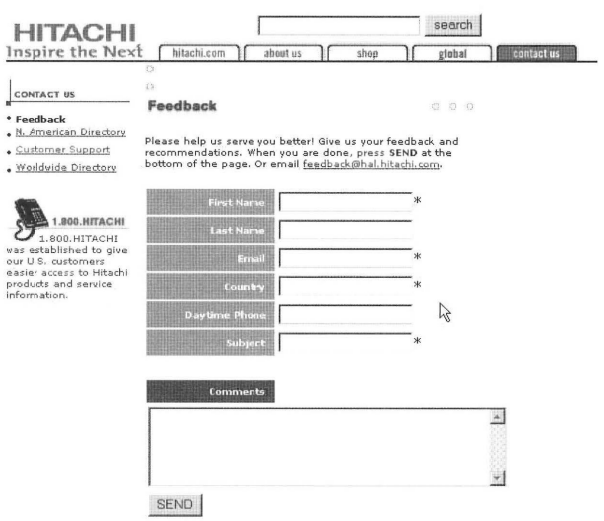
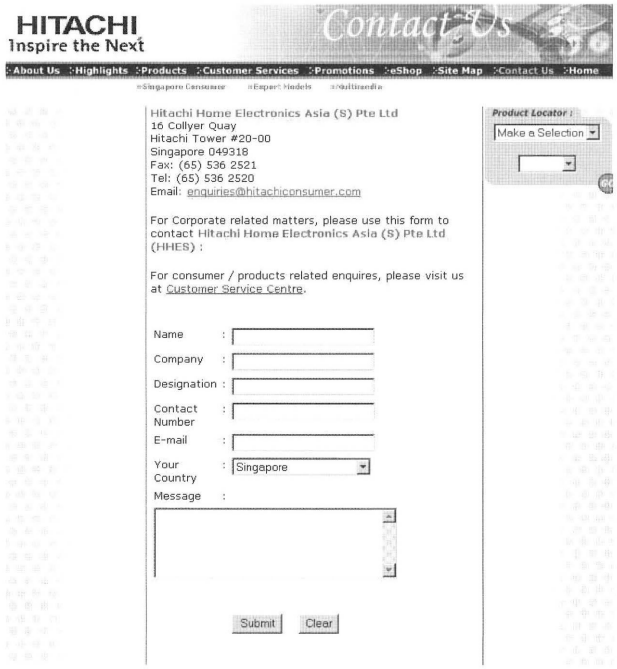
US (LTO 29)	Singapore (LTO 48)
	
No personal no-electronic information, just Web form mail contact	*Personal, no-electronic communication information on top*
Distance communication accepted as more efficient	Preference for face-to-face communication

Table 38 *Hitachi website: usage of communication methods*

Appearance
Short-term, time-oriented countries seem more likely to focus on achieving goals quickly; hence, they might tend to show fewer things, avoid overly ornamented imagery and focus on achieving practical goals. Long-term, time-oriented countries might do just the opposite.

Table 39 shows the usage of imagery in long-term oriented countries in comparison with short-term oriented countries. China (high LTO) uses warm, fuzzy images and pictures of groups, whereas Pakistan (low LTO) concentrates on showing tasks or products.

Design Observations

Visual syntax patterns
The previous analysis has concentrated on specific cultural dimensions and, within each, the likely characteristics of user-interface components. The following section discusses observations among the data collected that concern visual syntax and their relation to culture dimensions.

For example, comparing the images that are placed on each of the thirty-eight localized websites of PeopleSoft, we find the following patterns.

Power Distance

Ordered by Power Distance (*table 40*) it is conspicuous that:

- All countries that abstain from a picture on the front page have a very low power-distance value.
- The eight highest countries regarding their PD value show the picture of a man.

Individualism

Regarding individualism (*tables 41 and 42*), we see the following.

- The "individualism" of the pictures at the PeopleSoft website increases with the amount of IDV value, i.e., the eleven lowest individualism countries show only two different pictures, while the high IDV countries favor unique, or at least more varied images and they tend to emphasize close-ups.

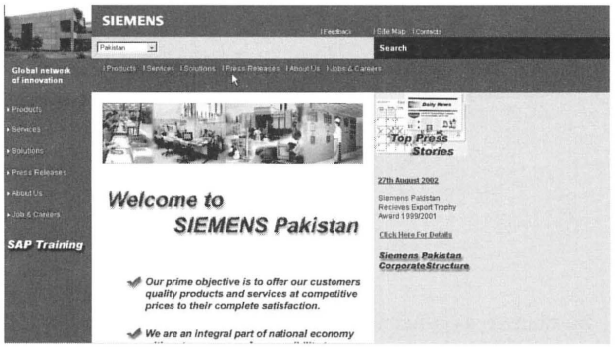
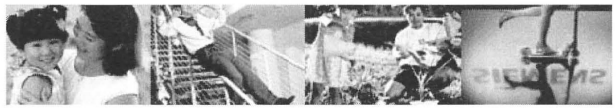
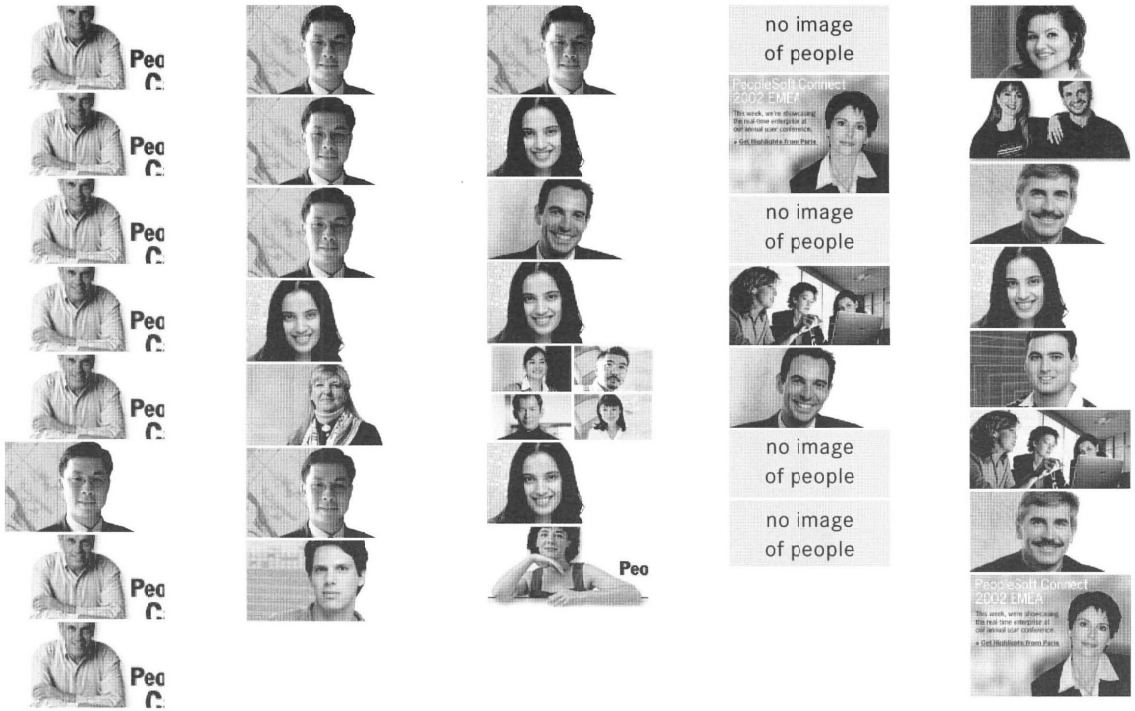
Pakistan (LTO 0)	China (LTO 118)
	
	
Concentration on showing tasks or products	Warm, fuzzy images, pictures of groups

Table 39 *Siemens website: task-oriented vs. group-oriented*

Low					High
Denmark (18)*	Great Britain (35)	Japan (54)	Columbia (67)	Mexico (81)	
New Zealand (22)	Germany FR (35)	Spain (57)	France (68)	Venezuela (81)	
Ireland (28)	Australia (36)	Taiwan (58)	Hong Kong (68)	Philippines (94)	
Norway (31)	Netherlands (38)	Uruguay (61)	Brazil (69)	Guatemala (95)	
Sweden (31)	Canada (39)	Chile (63)	Singapore (74)	Panama (95)	
Finland (33)	USA (40)	Peru (64)	India (77)	Malaysia (104)	
Costa Rica (35)	Argentina (49)	Thailand (64)	Ecuador (78)		
	Italy (50)	Belgium (65)	Indonesia (78)		

Table 40 *PeopleSoft website: front page imagery in order of Power Distance* *Number in parentheses indicates Hofstedt's power distance value



Low					High
Guatemala (6)*	Taiwan (17)	Philippines (32)	Germany FR (67)	New Zealand (79)	
Ecuador (8)	Singapore (20)	Uruguay (36)	Norway (69)	Canada (80)	
Panama (11)	Thailand (20)	Brazil (38)	Ireland (70)	Netherlands (80)	
Venezuela (12)	Chile (23)	Argentina (46)	France (71)	Great Britain (89)	
Columbia (13)	Hong Kong (25)	Japan (46)	Sweden (71)	Australia (90)	
Indonesia (14)	Malaysia (26)	India (48)	Denmark (74)	USA (91)	
Costa Rica (15)	Mexico (30)	Spain (51)	Belgium (75)		
Peru (16)		Finland (63)	Italy (76)		

Table 41 *PeopleSoft website: front page imagery in order of IDV*

*Number in parentheses indicates Hofstedt's value for individualism

- The arrangement of the pictures of the low individualism countries is very symmetrical.
- Among the fifteen lowest rated countries regarding IDV, there are no people shown on the Siemens localized website imagery, whereas we can find images of people in those countries that have a higher IDV.

Masculinity

Regarding masculinity (*table 43*) we observe the following.

- The countries with the lowest masculinity index show no pictures. The Netherlands (MAS 14) provides a picture of a man who looks the most androgynous among all localized front-page pictures.
- Japan, the country with the highest MAS index (MAS 95), selected four different pictures that appear randomly. The pictures are chosen very "symmetrically." Two men, two women, two of them looking directly into the eyes of the viewer, the gaze of the others is directed out of the picture. Italy (MAS Rank 70) shows a man and a woman with a gesture of connection. Great Britain (MAS rank 66) is the only country that chose three people to give the company's first impression: three women working in front of a laptop.

Long-Term (Time) Orientation

- The two countries with the highest long-term time orientation are the only ones that show the picture of a relatively mature women. (*table 44*)

Low					High
Guatemala (6)*	Taiwan (17)	Philippines (32)	Austria (55)	Denmark (74)	
Ecuador (8)	Singapore (20)	Greece (35)	Finland (63)	Belgium (75)	
Panama (11)	Thailand (20)	Uruguay (36)	South Africa (65)	Italy (76)	
Venezuela (12)	Chile (23)	Turkey (37)	Germany FR (67)	New Zealand (79)	
Columbia (13)	Hong Kong (25)	Brazil (38)	Switzerland (68)	Canada (80)	
Indonesia (14)	Malaysia (26)	Argentina (46)	Norway (69)	Netherlands (80)	
Pakistan (14)	Portugal (27)	Japan (46)	Ireland (70)	Great Britain (89)	
Costa Rica (15)	Yugoslavia (27)	India (48)	France (71)	Australia (90)	
Peru (16)	Mexico (30)	Spain (51)	Sweden (71)	USA (9)	

Table 42 *Siemens website: front page imagery in order of IDV*

*Number in parentheses indicates Hofstedt's value for individualism

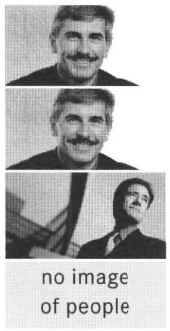
Low					High
Sweden (5)*	Guatemala (37)	Indonesia (46)	Columbia (64)	Philippines (64)	
Norway (8)	Uruguay (38)	Singapore (48)	India (56)	Great Britain (66)	
Netherlands (14)	Peru (42)	Brazil (49)	Hong Kong (57)	Germany FR (66)	
Denmark (16)	Spain (42)	Malaysia (50)	New Zealand (58)	Ireland (68)	
Costa Rica (21)	France (43)	Canada (52)	Australia (61)	Mexico (69)	
Finland (26)	Panama (44)	Belgium (54)	USA (62)	Italy (70)	
Chile (28)	Taiwan (45)	Argentina (56)	Ecuador (63)	Venezuela (73)	
Thailand (34)				Japan (95)	

Table 43 *PeopleSoft website: front page imagery in order of MAS*

*Number in parentheses indicates Hofstedt's value for masculinity

Consumer websites vs. business-to-business websites

When examining Coca-Cola and McDonalds (*tables 46 and 47*) as representatives of consumer-oriented websites, it is clear that the page-content focus is on entertainment and fun. Regarding the design, only the main corporate signs (color and logo) are the same on each website; the design varies greatly from country to country. There is also significant variation in navigation, and even the sections of content provided differ from website to website.



Low	Philippines (19) Canada (23) Great Britain (25) USA (29)	New Zealand (30) Australia (31) Germany FR (31) Sweden (33)	Netherlands (44) Singapore (48) Thailand (56)	India (61) Brazil (65) Japan (80)	Taiwan (87) Hong Kong (96) China (118)	**High**

Table 44 *PeopleSoft website: front page imagery in order of LTO*

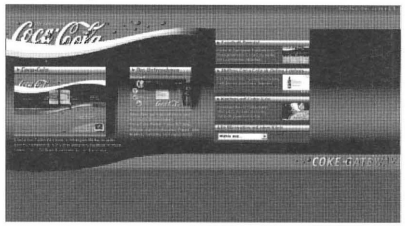
*Number in parentheses indicates Hofstedt's value for long term orientation

USA

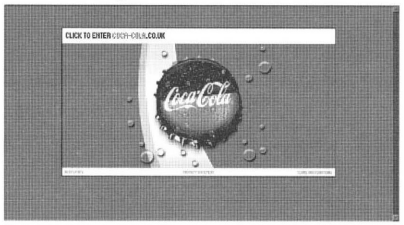
Singapore

Italy

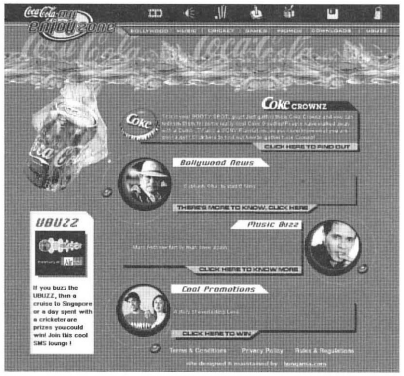
Germany



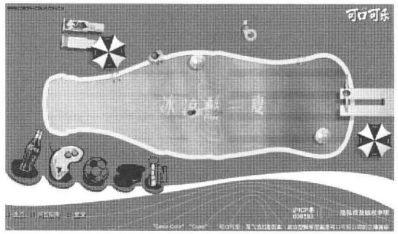
United Kingdom



India



China



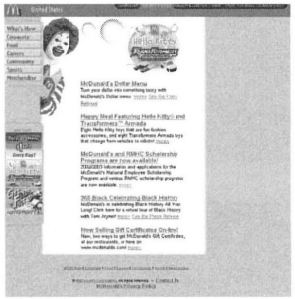
Japan

Table 45 *CocaCola websites differ greatly from country to country*

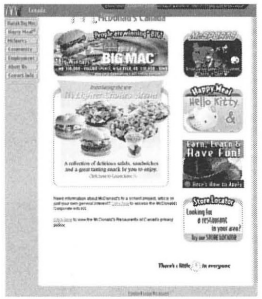
Contrast that variation with more business-to-business related websites (*tables 47 and 48*). They do not vary that much; they are localized but in more subtle ways. The content is largely the same on each localized website, and the design stays within a corporate framework.

Starting from this observation, we can assume that companies that have the end user in mind will care more about the appropriate localization of their websites. Presenting a global image is less important than meeting the needs of the consumer in each country. It appears that business-to-business (B2B) websites focus more on corporate identity.

USA

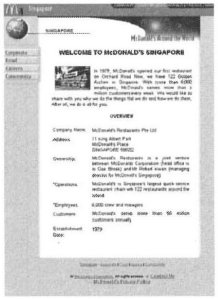


Canada



Japan

Singapore



Germany

Italy

India

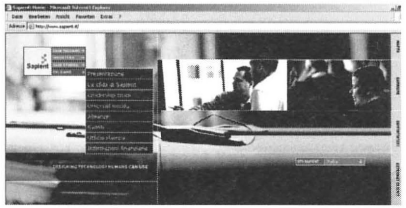
Table 46 *McDonalds websites differ greatly from country to ccuntry*

USA

Germany

India

Italy



Canada

United Kingdom

Japan

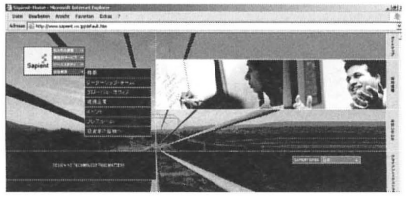
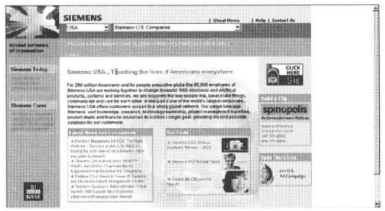


Table 47 *Sapient localized websites show subtle difference*

USA

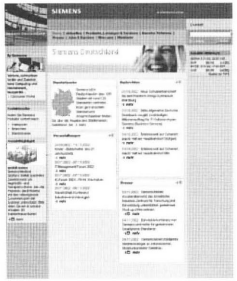


Canada

India

Italy

Germany



United Kingdom

Japan

China

Singapore

Table 48 *Siemens' localized websites*

Another important factor within this observation is the use of content management systems (CMS): it seems that most end-user oriented websites do not use a global CMS – it would be very costly and labor intensive to produce such a CMS for that many different websites within a company. B2B companies tend to use CMSs, which probably is also a reason for these kinds of websites to be less localized in terms of culture.

Combination of dimensions

During the course of investigation, it was not foreseen that at least two countries differ strongly from the standard approach to corporate style patterns: Italy and Great Britain. The following section shows examples and tries to interpret this fact.

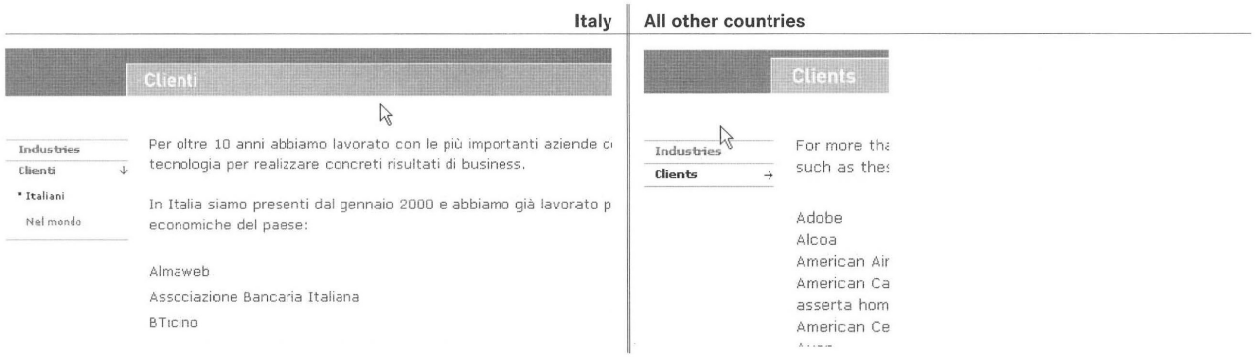


Table 49 *Sapient website: Italy is the sole country that separates Italian and worldwide clients*

Italy is different

	PD	IDV	MAS	UA
Italy	Rank 34	Rank 7	Rank 4	Rank 23

Visiting the client section of the Sapient website, the user finds a list of worldwide Sapient clients, except in the Italian version where the user finds a list of Italian clients. To see the worldwide Sapient clients, one additional click is necessary.

The same is true for the "leadership team" section: all other countries list the worldwide senior officers first and append the names of the local leadership team. Italy lists their Italian leaders first.

The United Kingdom is different

	PD	IDV	MAS	UA
UK	Rank 34	Rank 7	Rank 4	Rank 23

Within the whole version of Sapient's United Kingdom website, the UK website uses imagery differently from the other countries.

Examining how these two countries score in Hofstede's cultural dimensions, we find that the UK, as well as Italy, have very low power distance values on the one hand and relatively high individualism values. The low power distance might support the unilateral change regarding corporate specifications; the combination with the high power distance is an additional supporting factor for this "stepping out of line."

Italy	All other countries
Senior officers - Italia Gianfilippo Cuneo Karim Bibawi Alfio Puglisi Guido Crespi Valeria Martinetti **Senior officers - Corporate** Jerry A. Greenberg J. Stuart Moore	**Senior officers** Jerry A. Greenberg J. Stuart Moore Preston B. Bradford Chris Davey Sheeroy D. Desai Benoit Gaucherin Alan Herrick Steven J. Hoffman Susan D. Johnson Tracy Keogh Don R. Nelson Jane E. Owens **Deutschland** Arndt Rautenberg Dr. Christian Oversohl

Table 50 *Sapient website: Italy lists Italian leaders first*

United Kingdom	All other countries
	
	

Table 51 *Examples for the different usage of imagery on the UK Sapient website*

Conclusion

In this semi-formal exploration of websites, we found that the method used (described at the beginning of this text) helps to organize and analyse the collection of data.

Initial observations suggest that cultural habits run deeply and operate even under constraints of global design specifications. In high individualism and low power distance countries, variations from standard practice are likely to be most frequently observed.

We wish to point out that presenting the examples cited, while useful to illustrate patterns, does not necessarily mean that, *ipso facto*, any particular pattern is the right way to design or revise a user interface for a particular application or culture. The designer must take both context and culture into account. In addition, the user-interface designer also might consider how these patterns may influence cultures and design conventions, which undergo a continuous process of change.

One likely result of such research is a "culturebase" with specific conditions and predictable results that would inform a content management system, e.g., for large corporate websites. However, to draw specific conclusions and to use them in a content management system, more data are needed. This research method seems interesting and productive. Further research could produce quantitative and qualitative results that may feed culture-localization templates and tools.

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Websites

The websites were analyzed from Oct. 3rd – Nov. 4th 2002. The following URLs point to the global gateways of the websites.

http://www.coca-cola.com

http://www.hitachi.com

http://www.ibm.com

http://www.mazda.com

http://www.mcdonalds.com

http://www.mercedes.com

http://www.peoplesoft.com

http://www.sap.com

http://www.sapient.com

http://www.siemens.com

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SEEING AND THE MIXTEC SCREENFOLDS

Byron Hamann

"...in the eyes of the Mixtecs/to view several pages simultaneously..."

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Abstract

This essay focuses on pictorial documents created in 15th- and 16th-century Mexico (the "Mixtec screenfolds") in order to explore the interconnections of seeing, blindness and the materiality of reading. One aspect of this exploration focuses on the pre-conquest past: how were acts of seeing represented in Mixtec texts, and how do these depictions relate to broader questions of reading, blindness and social inequality in indigenous society? A second exploration focuses on cross-cultural translation: what problems arise when Western scholars "read" Mixtec screenfolds using techniques learned from spine-bound alphabetic books? What are the different bodily practices involved in reading, and in what ways might the reading practices of one society be inappropriate for approaching the texts of another? These central discussions are framed by a theoretical orientation drawn from Mauss and Derrida, and a concluding comparison looking to recent scholarship on the Bayeux Tapestry–an object that raises issues of reading similar to those in Mixtec research. Devoting equal space to analysis of indigenous society as to the Western discourse through which indigenous documents are read, the following pages present new techniques for visually approaching the painted surfaces of the screenfolds–techniques of reading that reveal layers of information previously unseen by contemporary scholarship.

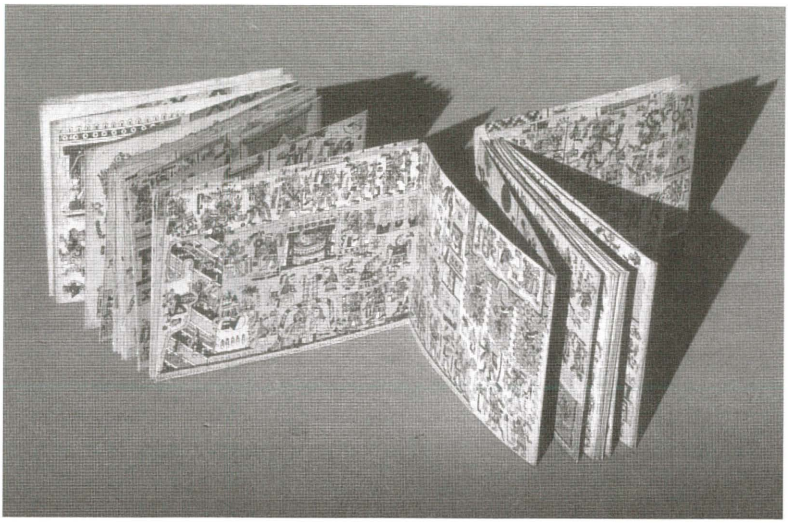


Figure 1 The Graz facsimile of the *Codex Zouche-Nuttall* opened to pages 19a–19b. Screenfold courtesy of Nancy Troike.

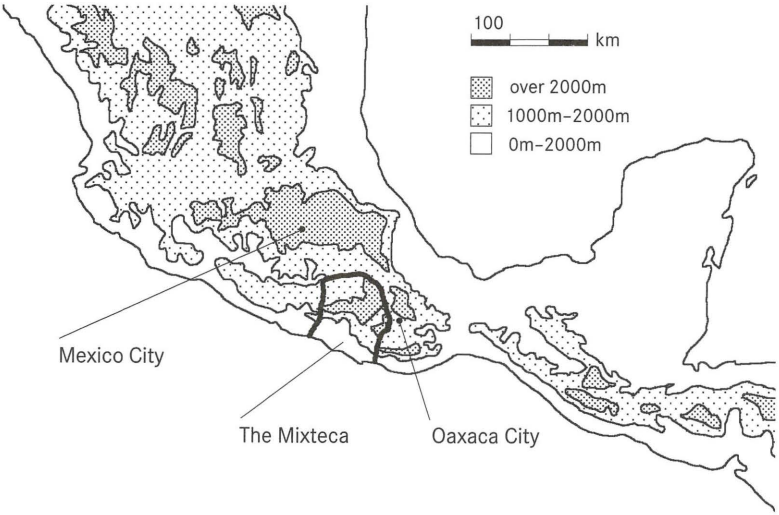


Figure 2 The location of the Mixteca in Mesoamerica.

Preface: of five Codex Nuttalls (material translations and physical incommensurations)

The two quotations in this essay's title are taken from the "Introduction" to a curious artifact: Dover Publications' 1975 *The Codex Nuttall: A Picture Manuscript from Ancient Mexico*.[1] Still in print, and currently the most widely circulated Mesoamerican pictorial text,[2] the Dover paperback is a complex object with a complex history. This preface will introduce the central themes of this essay–seeing, blindness and the materiality of reading–by outlining the Dover *Nuttall's* complexities.

The Dover paperback is based on one of the seven surviving "Mixtec codices," screenfolded manuscripts painted during the 15th- and 16th-centuries in what is now the Mexican state of Oaxaca (*figures 1, 2*). Using intricate paintings of people and places, dot-and-glyph calendar signs, and rebus-like phonetic codings, these seven manuscripts chronicle eight centuries of elite Mixtec history (ca. AD 900 to ca. AD 1560).[3] As they were originally read, these brilliant narratives were not bound to the surfaces of the screenfolds: they inspired epic performances of dance and song.[4] And as they were originally conceptualized (given the blurring of "reading" and "seeing" in Mixtec), the screenfolds were not simply vehicles for painted images: they were "instruments of seeing," prosthetic devices that enhanced elite vision by allowing glimpses into the past and into the realms of the gods.[5]

1. Miller, Arthur G. 1975. "Introduction to the Dover Edition." *The Codex Nuttall: A Picture Manuscript from Ancient Mexico*. New York: Dover, vii-xviii.

2. As of February 2002, 45,000 copies of the Dover *Nuttall* have been printed (personal communication, John Grafton, Dover Publications Senior Reprint Editor). Contrast this figure with the 300 copies of Zelia Nuttall's 1902 facsimile and the 3000 copies of the 1974 La Estampa Mexicana and 1992 Fondo de Cultura Economica/Graz editions of the *Zouche-Nuttall* (Troike, Nancy. 1987. "Introduction." *Codex Zouche-Nuttall*. Graz: Akademische Druck-und Verlagsanstalt, 27. Códice Nuttall. 1974. Mexico: La Estampa Mexicana, iv. Anders, Ferdinand, Maarten Jansen and Gabina Aurora Perez Jiménez. 1992. *Crónica Mixteca: El Rey 8 Venado, Garra de Jaguar, y la Dinastia de Teozacoalco-Zaachila: Libro Explicativo del Llamado Códice Zouche-Nuttall*. Mexico: Fondo de Cultura Económica, 257). Editions of 3000 are standard for the many codex facsimiles published in the 1990s by Fondo de Cultura Economica/Graz collaborations (e.g., Anders, Ferdinand, Maarten Jansen and Gabina Aurora Perez Jiménez. 1992. *Origen e Historia de los Reyes Mixtecos: Libro Explanativo del Llamado Códice Vindobonensis*. Mexico: Fondo de Cultura Económica, 259. Anders, Ferdinand and Maarten Jansen. 1994. *La Pintura de la Muerte y de los Destinos: Libro Explanativo del Llamado Códice Laud*. Mexico: Fondo de Cultura Económica, 319). In the 1960s, the Sociedad Mexicana de Antropología published editions of 1200 copies for the *Codex Colombino* and *Codex Selden*, and an edition of 600 for the *Codex Bodley* (Dennis, Bryan. 1994. *Hypertext and the Mixtec Screenfolds: Explorations in Writing, History, and Power*. Unpublished dissertation, University of California Los Angeles, 29).

3. Four of the Mixtec screenfolds are dated to before the arrival of Castilians in the Mixteca in 1521: the *Codex Bodley*, the *Codex Colombino-Becker* (or *Alfonso Caso*), the *Codex (Zouche-) Nuttall*, and the *Codex Vienna* (or *Vindobonensis*). Three of the screenfolds chronicle elite genealogies up to the middle of the 16th-century: the *Codex Becker II*, the *Codex Egerton* (or *Sanchez Solis*), and the *Codex Selden*. See Smith, Mary Elizabeth. 1973. *Picture Writing from Ancient Southern Mexico: Mixtec Place Signs and Maps*. Norman: University of Oklahoma Press.

4. King, Mark. 1990. "Rethinking Codices: Poetics and Metaphor in Mixtec Writing." *Ancient Mesoamerica* 1.1, 141–151. King, Mark. 1994. "Hearing the Echoes of Verbal Art in Mixtec Writing." In Boone, Elizabeth H. and Walter D. Mignolo, editors. *Writing Without Words*. Durham: Duke University Press, 102-136. Monaghan, John. 1990. "Performance and the Structure of the Mixtec Codices." *Ancient Mesoamerica* 1.1.

The creation of Mixtec screenfolds did not continue into the 17th-century, but already-produced manuscripts continued to have active social lives. In the mountains of Oaxaca and Puebla, they were preserved as family records, reinscribed with alphabetic glosses and mobilized in legal disputes and land transfers in the 18th- and 19th-centuries.[6] On the other side of the Atlantic, the screenfolds circulated as exotic marvels in the collections of European elites and ecclesiastics.[7] The *Codex Nuttall* (named as such, as we will see, in the 20th-century) was one such transatlantic voyager. By the 19th-century, it had become part of the library of the Monastery of San Marco in Florence–but in 1859 it was traveling again, now to England. During the late 1850s peninsular religious orders were dissolved as part of the creation of the Italian nation-state. In 1859 the Monastery of San Marco was dissolved, and its property was sold–including the *Codex Nuttall*. By 2 November 1859 the screenfold was in the hands of an English lord amassing a collection of documents materializing the "art and history of writing." In 1876 his son (Robert Nathaniel Cecil George Curzon, 15th Lord Zouche) loaned that collection–including the *Codex Nuttall*–to the British Museum.[8]

5. Monaghan, John and Byron Hamann. 1998. "Reading as Social Practice and Cultural Construction." *Indiana Journal of Hispanic Literatures* 13, 131-140. Monaghan, John and Byron Hamann. 2000. "La Construcción Cultural de la Lectura en Mesoamérica." In Constanza Vega, editor. *Codices y Documentos Sobre México, Tercero Simposio*. Mexico: Instituto Nacional de Antropología e Historia, 485-492.

6. Smith, Mary Elizabeth. 1963. "The Codex Colombino: a Document from the South Coast of Oaxaca." *Tlalocan* 4.3, 281-288. Smith, Mary Elizabeth and Ross Parmenter. 1991. The Codex Tulane. *Middle American Research Institute Publication* 61. New Orleans: Tulane University, 61-71. Monaghan, John. n.d. "Mixtec Codices and the Transition from Noble Estates to Corporate Communities in the Nineteenth Century."

7. Simons, Bente Bittmann. 1963. "Hieroglyphica Mexicana: A Manuscript in the Royal Library at Copenhagen." *Tlalocan* 4.2, 168-172.

8. Troike, "Introduction," 17-22.

9. The problems involved in the publication are discussed by Zelia Nuttall (1902. "Introduction." *The Codex Zouche-Nuttall*. Cambridge: Peabody Museum, 4-5), Nancy Troike ("Introduction," 27-28), and Ross Parmenter (n. d. "Mrs. Nuttall's Two Codices: Some Details of Their Publication." Parmenter Papers, Latin American Library of Tulane University).

And that is the place where the story of the 1975 Dover paperback begins.

It was in the British Museum, in June 1898, that Zelia Nuttall relocated the Mixtec manuscript she had seen in Florence decades before. Nuttall made arrangements with both the British Museum and the Peabody Museum to publish a lithographed facsimile of the codex that now bears her name–a facsimile published (with great consternation) in 1902.[9] Seventy years later, those lithographed pictures were reproduced in the Dover paperback. In sum, just as the *Codex Nuttall* has been multiply separated from its original Mixtec owners (crossing the Atlantic, passing through religious and elite and national hands), so too are the images in the Dover edition multiply removed from their original source: from painted deerskin, to lithographed screenfold, to printed paperback book.

A similar distancing characterizes the physical form of the Dover paperback. The original manuscript of the *Codex Nuttall* is a screenfold of gessoed deerskin–that is, it is composed of a long and narrow strip of hide (1125 cm by 25.5 cm) folded back and forth onto itself into 47 segments (each roughly 25.5 cm by 18.8 cm; *see figure 1*). Ms. Nuttall's 1902 edition replicated this screenfold form in a long strip of paper and linen. In contrast, the 1975 Dover edition sliced a once unbroken field of hide into the spine-bound pages of a Western book.

Translations always risk violence to their sources.[10] This is as true for material translations as it is for their lexical equivalents, and this violence can be seen with particular force in the collision of Mesoamerican objects and Western book forms.[11] One year before the Dover edition was published, a Mexican edition of the *Codex Nuttall* also translated the images from Nuttall's 1902 screenfold into the format of a Western book. La Estampa Mexicana's edition, like Dover's, sliced a once unbroken field of skin into spine-bound pages. But the Mexican edition also re-oriented those pages: a manuscript that once read from right to left was reorganized according to a left-to-right reading order.[12] Thus every set of facing pages in the 1974 edition must be reversed in order to be read; the result is a "disastrous" garbling of the pictorial narrative (*figure 3*).[13] Fortunately, the Dover edition avoided such a violent mistranslation by preserving the right-to-left sequencing. But this edition was still not able to avoid the slicing of scenes, and so some images that in the original manuscript flow across a fold of skin are, in the Dover edition, literally chopped in half by the cut of a page. Thus in their paperback presentation, the images that once spanned a fold between

10. Spivak, Gayatri. "The Politics of Translation." In *Outside in the Teaching Machine*. New York: Routledge, 180. Bassnett, Susan and Harish Trivedi, editors. 1999. *Postcolonial Translation: Theory and Practice*. New York: Routledge, 5. Dingwaney, Andura and Carol Maier. 1995. *Between Languages and Cultures: Translation and Cross-cultural Texts*. Pittsburgh: University of Pittsburgh Press. Cf. Mundy, Barbara and Dana Leibsohn. 1996. "Of Copies, Casts, and Codices: Mexico on Display in 1892." *Res* 29/30: 336, 340–341.

11. Scholars of 16th-century Central Mexican manuscripts have frequently argued that spine-bound books in indigenous style were based on now-lost screenfold sources. Visual "reconstructions" of these "lost" screenfolds are proposed by Donald Robertson (*Mexican Manuscript Painting of the Early Colonial Period: The Metropolitan School*. 1959. New Haven: Yale University Press, 75–77, 99–103, 109), Frances F. Berdan and Patricia Anawalt (editors. 1992. *The Codex Mendoza*. Berkeley: University of California Press, 1:160 – 161), and Ellen Baird (1993. *The Drawings of Sahagún's Primeros Memoriales: Structure and Style*. Norman: University of Oklahoma Press, 101, 115–116).

12. Derrida discusses a similar case: the translation into Japanese of a photo-essay he created with Marie-Françoise Plissart. Plissart's photos were designed to interact with each other across facing pages; Derrida's essay joined this left-to-right collaboration. But Japanese, of course, is written from right to left, and so the connections of images and texts were, in the translation, "reversed" and "confused"–"the text's untranslatability therefore became a fact in Japanese" (Derrida, Jacques, Peter Brunette, and David Willis. 1994. "The Spatial Arts: An Interview with Jacques Derrida." In Brunette, Peter and David Willis, editors. *Deconstruction and the Visual Arts: Art, Media, Architecture*. Cambridge: Cambridge University Press, 25–26).

13. Troike, Nancy. 1978. "Fundamental Changes in the Interpretations of Mixtec Codices." *American Antiquity* 43.4, 564.

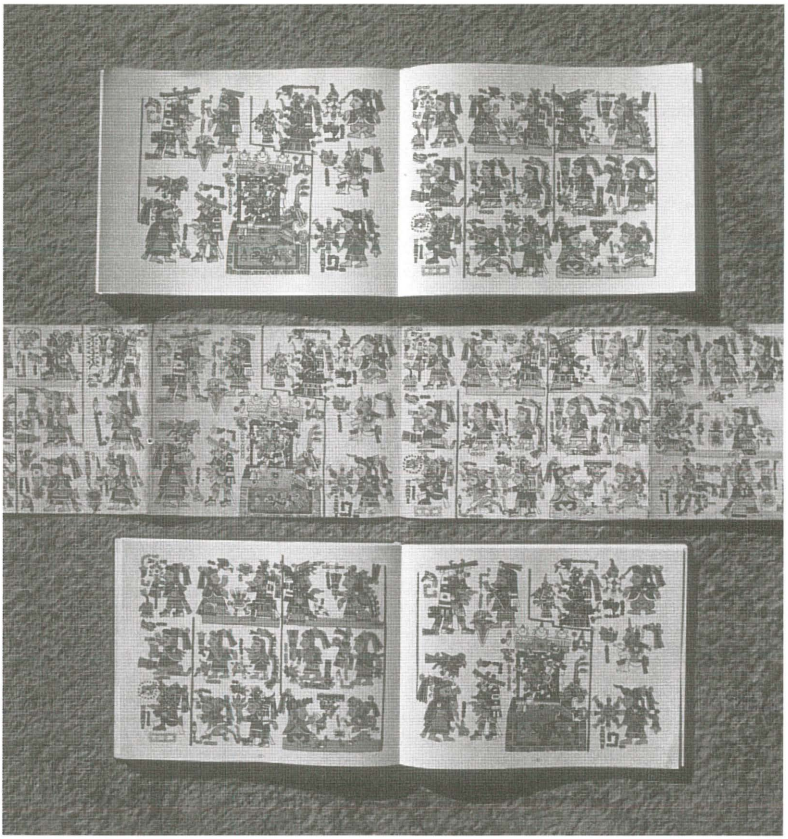


Figure 3 Comparison of the Dover (top), Graz (middle), and La Estampa Mexicana (bottom) editions of the *Codex Nuttall*. Note the alignment of images in the Dover and Graz editions, and the reversal of those images in the La Estampa Mexicana edition. Graz edition courtesy of Nancy Troike.

pages 6 and 7, 16 and 17, 27 and 28, and 37 and 38 are now placed on the front and back of a spine-bound page. Half of the scene rests on the back of a page and half of the scene rests on the front. One can no longer look at these fold-spanning scenes side by side–a particularly poignant separation for the weddings on 27 – 28, where the slice of a page separates two grooms from their brides, cutting their marriage mats in half (*figure 4*).

Thus this paper's titular quotations ("...in the eyes of the Mixtecs/to view several pages simultaneously...") are lifted from a document that embodies the tensions of the material translation of a screenfolded object into a spine-bound book. This translation, it should be clear, has both physical and conceptual consequences. With the Dover paperback, one can no longer "view several pages simultaneously"–indeed, one can no longer read certain fold-crossing scenes as complete narratives. The tensions embodied by the Dover *Codex Nuttall*– of physical and conceptual translations, of Western and Mesoamerican practices–orient the following explorations of seeing, blindness and the materiality of reading. My discussion will shift back and forth between Mixtec modes of seeing and Western modes of seeing–and will ask how these divergent forms of seeing connect to the reading of the screenfolds. My aim is to focus as much on 15th- and 16th-century Mixtec conceptions and materialities as on the modern Western practices through which these are now studied.

Two aspects of "seeing and the Mixtec screenfolds" are considered in the following pages. Each discussion involves a distinct visual mode; each derives its subtitle from the Dover paperback's introduction. The first, "In the eyes of the Mixtecs," zooms in to consider the details of screenfold painting. The second, "To view several pages simultaneously," telescopes out to scan the visual compositions created by looking at several pages at the same time. Despite their differing visual modes, both sections embed acts of seeing within social, material and bodily contexts. The first focuses on the 15th- and 16th-centuries, and on class inequality. The second focuses on reading practices in the 20th- and 21st-centuries, and on material and visual translation.

Questions Mixtec are at the center of the paper, but the two central analyses are framed by two shorter discussions that look beyond the Mixteca. I begin by drawing from the work of Jacques Derrida and Marcel Mauss to build a theoretical orientation to seeing, blindness and the materiality of reading. I conclude by turning to the Bayeux Tapestry–a repeated point of reference in Mixtec research, and an object whose recent interpretations address the issues of seeing, blindness and the materiality of reading that are this essay's preoccupations.

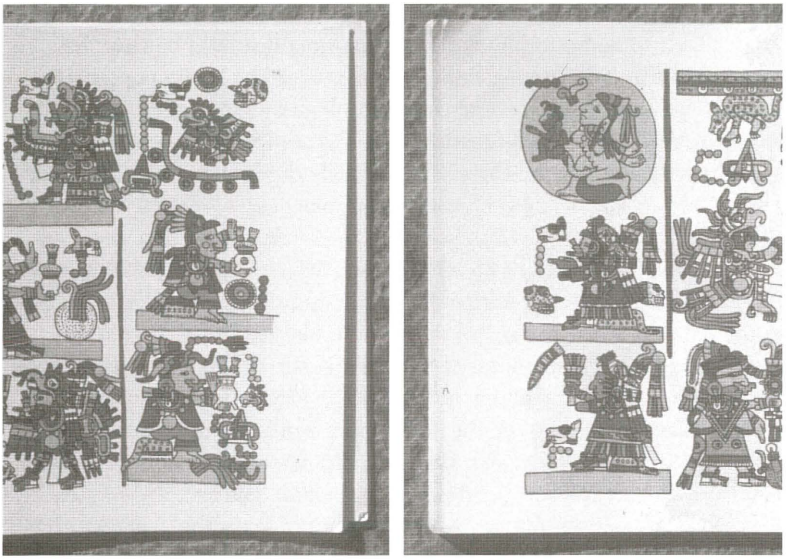


Figure 4 Pages 27 (right) and 28 (left) of the Dover edition of the *Codex Nuttall,* showing the marriages of Lord 4 Dog and Lady 4 Skull, and Lord 5 Dog and Lady 5 Eagle.

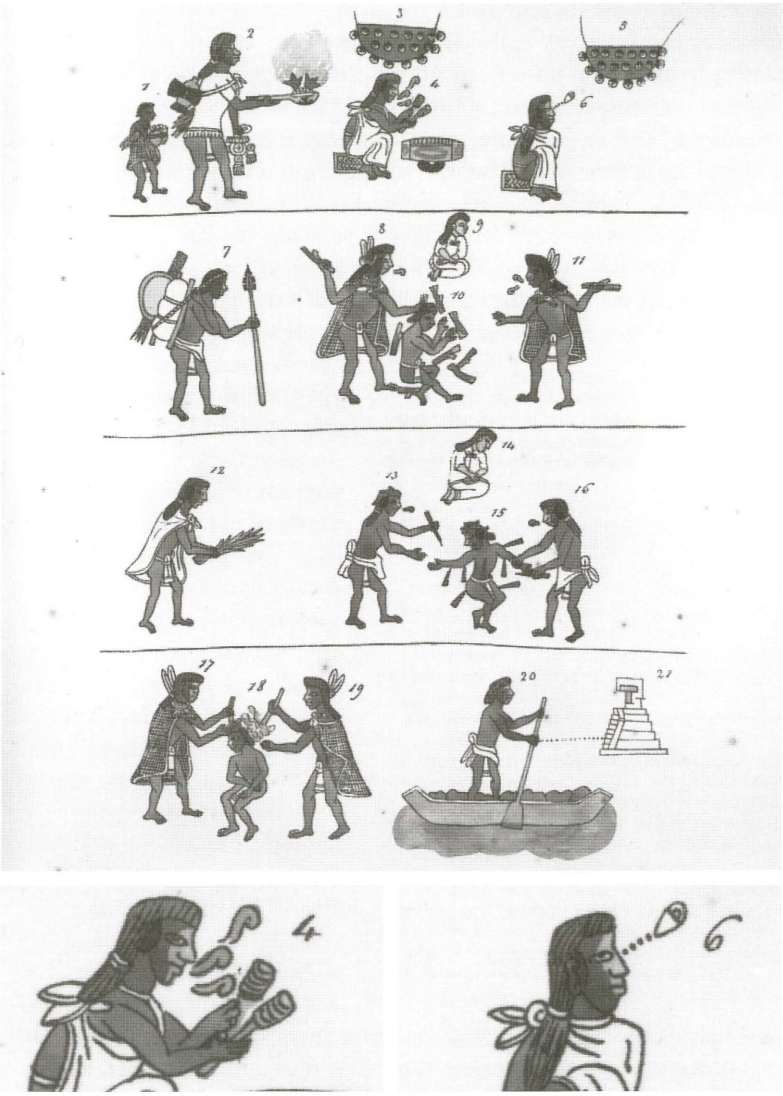


Figure 5. Page from the Nahua (Aztec) *Codex Mendoza*, as reproduced in Volume 1 of Kingsborough's *Antiquities of Mexico* (1831, page 63). Although a Nahua, and not a Mixtec document, the *Codex Mendoza* illustrates pan-Mesoamerican conventions for representing speech (the curved lines at 4; compare with figure 8) and vision (the dotted lines and extra-corporeal eyeball at 6; compare with figures 7 and 8). Image reproduced courtesy of the Beinecke Rare Book and Manuscript Library, Yale University.

"How inappropriate and awkward is the book-bound format": embodied reading[14]

In 1833 (at the same time Lord Kingsborough's *Antiquities of Mexico* (figure 5) was disseminating spine-bound facsimiles of three Mixtec screenfolds, and in the same year a lecturing John Constable dismissed as equally primitive both Mexican manuscripts and the Bayeux Tapestry–but more on that below, Charles Wheatstone published the results of his research on binocular parallax. Parallax concerns the ways in which the separate optical intakes of two human eyes are merged in the brain into a single field of vision; one of the results of Wheatstone's discoveries were the theoretical principles behind stereographic photography.[15] Stereographic photographs present two slightly different views of the same scene. When viewed at the proper distance, through the prosthesis of a stereoscope, the two images merge in the mind's eye to create a three-dimensional illusion. The theoretical discussion in the following paragraphs pursues a similarly stereoscopic strategy. I juxtapose the work of Marcel Mauss with that of Jacques Derrida, relating two of their texts as both overlapping and supplementary.[16] By placing their discussions side by side, I construct an apparatus through which to approach questions of vision, blindness their embodiments, and–finally–the surfaces of Mixtec screenfolds.

Seeing and reading always involve culturally-specific bodily practices and material contexts.[17] But because we are largely unconscious of our own culturally-determined techniques of seeing and reading, it is easy to impose our technique-assumptions onto the seeing and reading of

14. This section-title quotation is taken from Miller, "Introduction," viii.

15. Kingsborough, Lord [Edward King]. 1831 - 1848. *Antiquities of Mexico. London*. Leslie, C. R. 1937. *Memoirs of the Life of John Constable*. London: R. A., 376. Crary, Jonathan. 1990. *Techniques of the Observer*. Cambridge: MIT Press, 116-126.

16. For Derrida's own discussions of Mauss, see his 1978 "Structure, Sign, and Play in the Discourse of the Human Sciences" (Alan Bass, translator. *Writing and Difference*. Chicago: University of Chicago Press, 278-294) and his 1992 *Given Time: 1. Counterfeit Money* (Peggy Kamuf, translator. Chicago: University of Chicago Press).

17. Boyarin, John, editor. 1993. *The Ethnography of Reading*. Berkeley: University of California Press. Mair, Victor. 1988. *Painting and Performance*. Honolulu: University of Hawaii Press. Street, Brian, editor. 1991. *Cross-Cultural Approaches to Literacy*. Cambridge: Cambridge University Press. For studies of the specifically material contexts of reading, of "writing as material culture," see the work of M. T. Clanchy (1979. *From Memory to Written Record: England 1066-1307*. Oxford: Blackwell), Juliet Fleming (2001. *Graffiti and the Writing Arts in Early Modern England*. Philadelphia: University of Pennsylvania Press), Dana Leibsohn (2000. "Mapping after the Letter: Graphology and Indigenous Cartography in New Spain." In Gray, Edward G. and Norman Fiering, editors. *The Language Encounter in the Americas: 1492 - 1800*. New York: Berghahn), Barbara Little (1992. "Explicit and Implicit Meanings in Material Culture and Print Culture." *Historical Archaeology* 26:85-94), D. F. McKenzie (1981. "Typography and Meaning: The Case of William Congreve." In Barber, Giles and Bernhard Fabian, editors. *The Book and the Book Trade in Eighteenth-century Europe*. Hamburg: Hauswedell) and Brinkley Messick (1993. *The Calligraphic State: Textual Domination and History in a Muslim Society*. Berkeley: University of California Press).

other societies. Mauss and Derrida both think through the strangeness and particularity of visual practices–and in turn help me to think about the differences in reading and seeing in the 15th- and 16th-century Mixteca and in the 20th- and 21st-century West.

Mauss's 1935 "Techniques of the Body" and Derrida's 1990 *Memoirs of the Blind* both ponder questions of vision and (dis)ability. Mauss's essay focuses on the body and its socialization, exploring (among other things) the "training" and "education of vision"–from an introductory vignette on teaching children to swim with their eyes open to an overview of the social significances of the stare.[18] Derrida's *Memoirs of the Blind* –a catalog of an exhibition he curated at the Louvre–draws on sketches of blind men and self-portraits, exploring (among other things) "the overabundance and the failure of the visible"–from the sight-refreshing blindnesses of the blink to the role of memory and habit in the unseeing acts of drawing without looking at a model and writing without looking at the page.[19]

Mauss and Derrida articulate four issues productive for thinking about seeing and the Mixtec screenfolds. Two involve Mauss's and Derrida's blurrings of the common-sense boundaries (internal and external) with which the body is often divided. First, Mauss and Derrida both write on *sensory synaesthesia*: that is, on the connections of the supposedly-separate "five senses" to each other through the flesh of the body. Mauss reminisces on the confusion of coordination, the dis-ability, that arose in the first World War when English soldiers attempted to march, move their bodies, to the sounds of French musicians.[20] Derrida writes explicitly and constantly on the synaesthesias of vision, from images of eyes at the tips of the fingers to a description of a blind woman for whom "all the colors are translated into sounds and smells."[21] Evocations of the blurring of "all the borders separating the senses" are important, because they remind us that the Aristotelian model of "five senses" (each with its own sense-organ) is simply a possible–not a necessary–division of the body and its sensations.[22] Indeed, the Mixtec ideas about seeing discussed below incorporate not simply the eyes, but the face as well; involve not only an optical *seeing*, but also a cognitive *knowing*.

18. Mauss, Marcel. 1973[1935]. "Techniques of the Body." *Economy and Society* 2.1, 71, 76, 79, 86.
19. Derrida, Jacques. 1993. *Memoirs of the Blind: The Self-Portrait and Other Ruins*. Brault, Pascale-Anne and Michael Naas, translators. Chicago: University of Chicago Press, 29, 32, 3, 36.
20. Mauss, "Techniques," 72.
21. Derrida, *Memoirs*, 43, 41; see also 4, 6, 16.

If Mauss and Derrida confound internal divisions of the senses and sense-organs, they also confound the bodily-boundaries of these senses and organs as they are extended through *prosthetic devices*. Mauss constantly connects bodily techniques to extra-corporeal instruments: shoes, shovels, rock crystals, poles. Indeed, he claims that the very category of "techniques of the body" took shape for him when he realized that the body, too, could be an instrument, that the body was "man's first and most natural technical object."[23] Derrida also writes on both "the body proper as an instrument" as well as on the body's visual extension through "technical objects designed, like prostheses, to supplement sight...mirrors, telescopes, glasses, binoculars, monocles."[24] A consciousness of prosthetics as extensions of "the body proper as an instrument" is important for my project because Mixtec–indeed Mesoamerican–categorizations of books viewed them as prosthetic devices, "instruments of seeing" for the elite class. And yet, as discussed below, the prosthetic status of these screenfolds raises a paradox: why do semi-divine elites, beings depicted with "smoking" and "fiery" vision, need to further supplement their bodies with prosthetics? Why are their rarified bodies not self-sufficient?

The importance of prosthetics in Mauss and Derrida and in Mesoamerican elite culture raises a third issue, the issue of *competence and (dis)ability*–and here my comparison uses Derrida to supplement Mauss. For as Derrida emphasizes (and as Mesoamerican "instruments of seeing" reveal), bodily competence is always accompanied by bodily (dis)ability. Derrida repeatedly returns to the inescapable partiality of vision: there is no absolute gap between vision and blindness; seeing is always selection, not-seeing. The artist, for example, cannot possibly represent the infinite complexity of the visible world, and so any drawing is constituted as much by what it shows as by what it ignores: "The heterogeneity between the thing drawn and the drawing trait remains abyssal, whether it be between a thing represented and its representation or between the model and the image."[25] And this tension, the gap between what is potentially visible and

22. Derrida, *Memoirs*, 4. Aristotle. 1941. "Of the Soul." In McKeon, Richard, editor. *Basic Works of Aristotle*. New York: Random House, 567–586. The arbitrariness of this division is further seen in cases of medical synaesthesia in the West (Cytowic, Richard E. 1995. *The Man Who Tasted Shapes*. New York: Warner Books. Harrison, John. 2001. *Synaesthesia: The Strangest Thing*. Oxford: Oxford University Press) as well as in discussions of sensory understandings outside of the Aristotelian tradition (Classen, Constance. 1993. *Worlds of Sense: Exploring the Senses in History and Across Cultures*. New York: Routledge. Houston, Stephen, and Karl Taube. 2000. "An Archaeology of the Senses: Perception and Cultural Expression in Ancient Mesoamerica." *Cambridge Archaeological Journal* 10.2, 289. Howes, David, editor. 1991. *The Varieties of Sensory Experience*. Toronto: University of Toronto Press. Stoller, Paul. 1989. *The Taste of Ethnographic Things: The Senses in Anthropology*. Philadelphia: University of Pennsylvania Press.

23. Mauss, "Techniques," 71, 83, 74, 81, 75.

24. Derrida, *Memoirs*, 4, 6, 70.

what is actually "seen," is not just a concern for artists: it is the condition of vision itself. To see "everything" would be like looking on the face of a gorgon: it would be overwhelming, paralytic, incapacitating. Blindness to the "multiplicity of details" in the world is thus not a liability of vision–it is vision's condition of possibility.[26] All acts of seeing are made possible by varying degrees of blindness–and, in turn, differing levels of blindness enable differing forms of vision.[27] A similar interconnectedness of ability and (dis)ability is found in Mauss's essay–despite Mauss's own attempts to separate the "stupid" "inferiority" of certain body techniques from other techniques which bestow "advantage."[28] Mauss's "Techniques of the Body" is paradoxically filled with images of bodily incompetence. Mauss repeatedly describes situations in which the body is suddenly disabled by an unfamiliar situation– the handicapping of English soldiers attempting to march to the beat of a French band or to dig with the unfamiliar design of French spades, the awkwardness that shoe-wearers feel when made to go barefoot.[29] Competence and handicap are revealed to be closely linked: the competence of one form of bodily training in one situation can easily become a handicap in another. And this is the point where Mauss's desire to separate "advantage" from "inferiority" deconstructs itself: "advantage" and "inferiority" are contextually determined; one can always become the other. Much as vision is always linked to blindness, so too is any bodily advantage always a potential liability. Such issues of (dis)ability have multiple implications for a study of the Mixtec screenfolds. The (dis)abilities of elite vision in Mesoamerica were alluded to in the last paragraph, but (dis)ability also has implications for modern Western academic approaches to Mixtec screenfolds. Such approaches, I show below, use reading techniques imported from spine-bound Western books. These techniques have led to rich interpretations–but they have been also powerful techniques of blindness, obscuring important aspects of Mixtec scribal art.

Of course, as W.J.T. Mitchell emphasizes, the connection between physical and metaphysical blindness

25. Derrida, *Memoirs*, 45.

26. Derrida, *Memoirs*, 45.

27. This is well attested in autobiographical and clinical accounts of the onset, or removal, of forms of "compromised" eyesight. Legally blind persons who have "normal" sight surgically restored lament the quality of sight they have lost, or even refuse to "see" with their restored eyesight. Colorblind people attest to the beauty of their colorless vision, rejecting the possibility of restoring polychromatic sight. Cixous, Hélène and Jacques Derrida. 2000. *Veils*. Bennington, Geoffrey, translator. Stanford: Stanford University Press. Sacks, Oliver. 1995. *An Anthropologist on Mars: Seven Paradoxical Tales*. New York: Alfred Knopf, 3–41, 108–152. Sacks, Oliver. 1997. *The Island of the Colorblind*. New York: Alfred Knopf. On blindness, prophecy, instruments of seeing, and books of revelation, see Kushner, Tony. 1994. *Angels in America, Part Two: Perestroika*. New York: Theatre Communications Group, 41–48.

28. Mauss, "Techniques," 71, 77, 85.

29. Mauss, "Techniques," 71–72, 74.

should not make us forget the prejudices and socially-imposed handicaps faced by persons whose bodies are socially-defined as compromised.[30] This is the fourth aspect of my theoretical apparatus: the *prestiges and prejudices* that are assigned to different bodies and bodily capacities–and here I use Mauss to supplement Derrida. Mauss's essay was originally delivered as a lecture at a meeting of the Société de Psychologie. The central argument of his address was the need for psychologists to consider not only the biological but the social as well. "It is the triple viewpoint [psychology, sociology, biology], that of the 'total man' that is needed."[31] If we read Derrida through this "triple viewpoint," a significant lacuna becomes visible. As was mentioned above, Derrida is constantly concerned with the biological (from synaesthesia to optic nerves to the mechanics of binocular vision). And he is constantly concerned with the psychological as well (with Freudian concerns of fathers, sons, blindness and castration being the most prominent psychological motifs). But his discussion of the social interpretations and implications of blindness is surprisingly lacking. Derrida acknowledges this gap ("my *story of the eye* also indicates...the necessity of an anthropology or cultural ophthalmo-pathology"; "One might here locate, in all rigor, the condition for a sociology of the graphic art and for a pedagogy of the gaze"). But although he sketches out these broader contexts, Derrida does not focus on issues of prejudice and privilege–issues important for Mauss, and central for my discussion.[32] Again, one focus of Mauss's essay is pedagogy, the social training of the body. But another repeated concern–linked to the question of why people allow themselves to be trained, why they mimic certain behaviors–is *prestige*. Mauss describes many forms of prestige: the prestige of adulthood, of the foreign, of the "from above" generally.[33] And he shows that prestige has implications for more than just bodily training. A person's bodily techniques *reveal* "the place he occupies" in society, such techniques are "moral and intellectual symbols."[34] These are crucial observations for my approach to Mesoamerican vision. Wherever we have evidence for enhanced vision in Mesoamerica, we also have evidence for handicapped vision as well: in the aforementioned paradox of elite vision needing optical supplements, in the class inequalities of elite supernatural sight contrasted with the downcast eyes of the socially subordinate.

In sum, this stereoscopic juxtaposition of Mauss and Derrida has focused

30. Mitchell, W.J.T. 2001. "Seeing Disability." *Public Culture* 13.3, 391–397.
31. Mauss, "Techniques," 75.
32. Derrida, *Memoirs*, 17, 64. This underemphasis of the social can be seen even more clearly when contrasted with Derrida's detailed discussion, in *Given Time*, of the changing social position of beggars in European society (134–138.)
33. Mauss. "Techniques," 72-74.
34. Mauss. "Techniques," 76.

on four articulations, all of which introduce issues encountered in the following discussion of the Mixtec screenfolds: synaesthesia, prosthesis, (dis)ability and prestige. To conclude this stereograph, and as a segue to the codical analyses that follow, I'll end as I began: with a discussion of the biology of human vision. All human eyes are marked by blind spot.[35] Physiologically, the back surface of the eye is covered with photoreceptor cells–in all but one place, the "hole" in the eye where the nerves from these cells join to create the optic nerve, which passes through the back of the eye to the brain. Stereoscopic input from the other eye usually compensates for this gap in vision, but a simple test, reproduced here (*figure* 6), allows you to "see" your blind spots. Appropriately (given the constant connections between vision and blindness that I have been discussing) this is a paradoxical illustration: your own blind spots are revealed to you when you become unable to see something right in front of your eyes. The blind spot illustrates the permeability of the boundary between vision and blindness: the optic nerve that makes vision possible is also that which causes a region of blindness in even healthy eyes. Intriguingly, this optic nerve is a common sight in Mesoamerican art. Screenfold pages and painted ceramics writhe with gory images of eyeballs torn from their sockets, suspended in their dangling by the uncut optic nerve. And yet–paradoxically again–these images of extruded eyes and optic nerves are not images of blindness. As long as the optic nerve is unsevered, the eye is able to see. Images of protruding eyeballs are thus images of altered states of seeing brought about by the physical manipulation of the optic organs themselves.[36]

With these images of extended eyesight, I turn again to the Mixtec screenfolds.

35. Derrida. *Memoirs*, 53, 56.

36. Houston and Taube, "Archaeology," 281.

37. Other studies of vision (and invisibility) in pre-Conquest Mesoamerica are found in essays by William A. Haviland and Anita de Laguna Haviland (1995. "Glimpses of the Supernatural: Althered States of Consciousness and the Graffiti of Tikal, Guatemala." *Latin American Antiquity* 6.4, 295-309), Stephen Houston and Karl Taube ("Archaeology"), Scott Hutson (in press. "Ways of Seeing." *Art for Archaeology's Sake: Proceedings of the Thirty-Third Annual Chacmool Conference*. Calgary: Archaeology Department, University of Calgary), Dana Leibsohn and Michael Schreffler (1999). "Seeing the Unknown, Knowing the Unseen: Representation and Vision in Tenochtitlán." Paper presented at the 1999 Society for American Archaeology Meetings, Chicago), Esther Pazstory (1996. "Aesthetics and Pre-Columbian Art." *Res* 29/30, 324), and Kay Read (1995. "Sun and Earth Rulers: What the Eyes Cannot See in Mesoamerica." *History of Religions* 34.4, 351-384).

"In the eyes of the Mixtecs": screenfold representations of elite vision

This section focuses its eyes on the details of codex pages–specifically, the detailed depictions of elite Mixtec eyes.[37] I argue that pictorial elaborations of elite eyes represent elite vision–much as speech scrolls

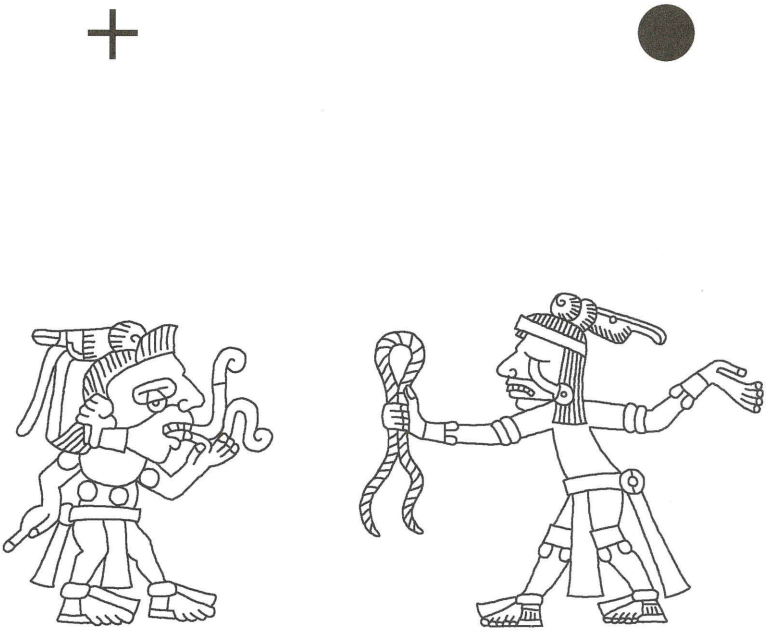


Figure 6 Top: Optic nerve test. Close your left eye and look at the cross mark in the diagram with your right eye. You should still be able to see the black dot in the peripheral vision of your right eye. Slowly move your head closer to the page, keeping your right eye focused on the cross mark. At a certain distance (about a foot from the surface of the page), the dot will disappear: its image is falling on the blind spot in your eye. Below: images of extruded eyeballs in the *Codex Nuttall* (left, page 77) and the *Codex Laud* (right, page 23). Codex images reproduced with the permission of the Akademische Druck-und Verlagsanstalt, Graz.

represent elite song (*figure 5.4*). Significantly, these eye-elaborations are shared across the codices. Rather than being idiosyncratic "nicknames" of particular elites, the repetitive nature of these eye-elaborations reveals that there were pan-Mixtecan assumptions about specific *styles* of elite vision, that elite vision was associated with certain widely held *qualities*. I also show that elite brows are often elaborated in the same ways as elite eyes. This iconographic parallelism points to the specificity of Mesoamerican body cartography–to the ways eyes and brows were merged in a facial surface for seeing-knowing. I conclude by linking these representations of elite vision to pan-Mesoamerican issues of social inequality: how class was linked to ideas about elite bodies, and how class inequality was linked to the (dis)ability of vision.

The eyes of elite Mixtecs painted in the seven surviving screenfolds have received occasional attention in the writings of Mixtec scholars.[38] One aspect of Mixtec eye representation that has (until now) not received focused analysis is the frequency with which the eyes of Mixtec elites are marked, elaborated. A feather emerges from the eye of one man in the *Codex Bodley*. Serpents coil from the eyes of men the Codices *Egerton, Nuttall* and *Vienna*. And smoke billows from the eyes of both men and women in the Codices *Nuttall* and *Bodley* (*figure 7*).

But other images raise the question of whether it is the eyeball per se that is the conceptual focus of these elaborations. Perhaps the most famous codical individual with an elaborated eye is the *Codex Nuttall*'s Lord 12 Wind "Smoking Eye." The majority of his depictions show him with an eye surrounded by curls of smoke (*figure 7 smoke a*). But in one case, it is not his eye that exudes smoke: on page 19b, smoke emerges from his brow (*figure 8*). And this parallel pairing of eye-emerging substances with brow-emerging substances is not limited to Lord 12 Wind. A fiery eye in the *Codex Vienna* can be paired with fiery brows in the *Codex Selden*. An eye surrounded by the face of a *yawi* (a supernatural animal) in the *Codex Nuttall* can be paired with the emergence of a *yawi* tail and foot from brows in the *Codex Selden* (*figure 7*).

How, then, are we to interpret these multiply-elaborated eyes–and the brows that seem to share the same conventions? First, I critique traditional interpretations that gloss these elaborations as nothing more than isolated, individualized "nicknames:" Lord 12 Wind "Smoking Eye," Lord 3 Reed "Plume in the Eye," Lord 9 House "Face of Fire."[39]

38. Troike, Nancy. 1982. "Studying Style in the Mixtec Codices: An Analysis of Variations in the Codex Colombino-Becker." In Cordy-Collins, Alana, editor. *Pre-Columbian Art History: Selected Readings*. Palo Alto: Peek Publications, 129-134, 150. Jansen, Maarten and Gabina Aurora Perez. 1983. "The Ancient Mexican Astronomical Apparatus: An Iconographical Criticism." *Archaeoastronomy* 4: 89-94.

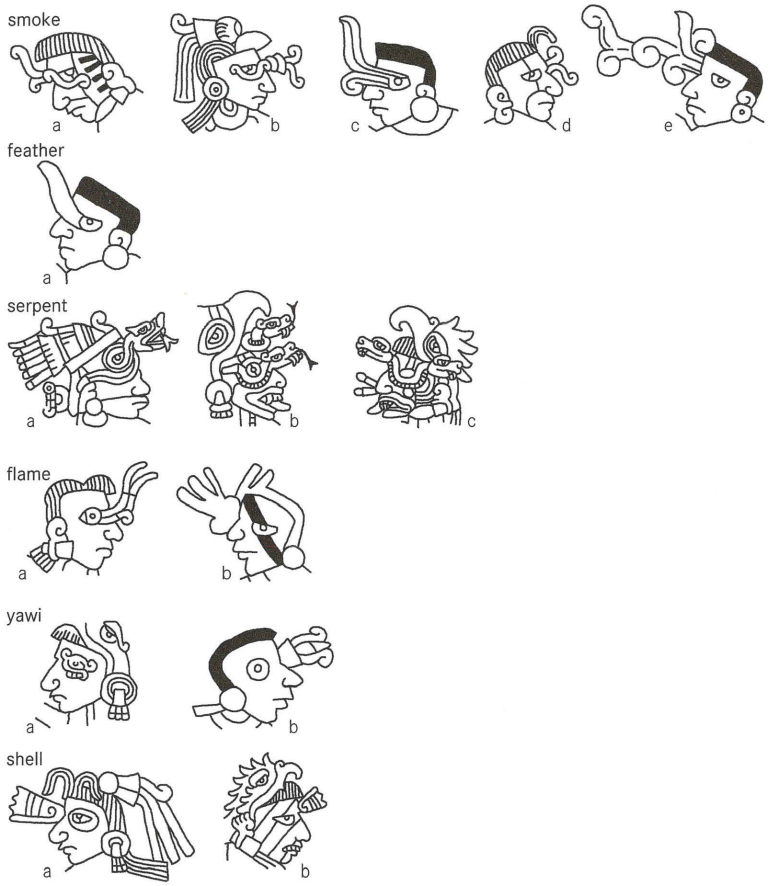


Figure 7 Representations of vision in the Mixtec screenfolds. Smoke: (a) Lord 12 Wind, *Codex Nuttall* 18; (b) Lady 10 Alligator, *Codex Nuttall* 25; (c) Lord 3 Reed, *Codex Bodley* 8; (d) Lord 12 Wind, *Codex Nuttall* 19b; (e) Lord 2 Eagle, *Codex Bodley* 13. Feather: Lord 3 Reed, *Codex Bodley* 24. Serpent: (a) Lord 10/11 Dog, *Codex Egerton* 11; (b) Lord 4 Skull, *Codex Vienna* 32; (c) Lord 4 Deer, *Codex Nuttall* 57. Flame: (a) Unnamed man, *Codex Vienna* 7; (b) Lord 9 Lizard, *Codex Selden* 12. Yawi: (a) Lady 10 Alligator, *Codex Nuttall* 13; (b) Lord 2 Flower, *Codex Selden* 7. Shell (a) Lord 10 Grass, *Codex Nuttall* 23; (b) Lord 5 Eagle, *Codex Nuttall* 66. Images reproduced with the permission of the Akademische Druck-und Verlagsanstalt, Graz.

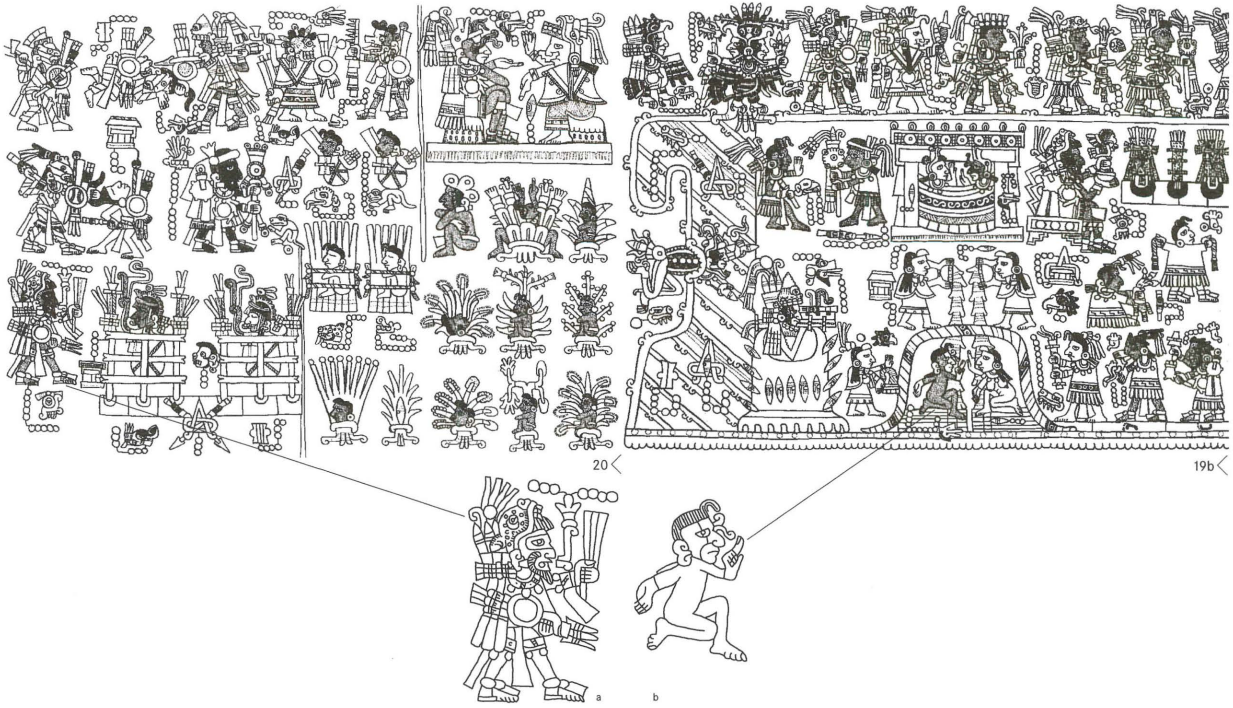


Figure 8 Lord 12 Wind "Smoking Eye" with a smoking brow (a) and Lord 10 Rain with a "7 Flower" speech scroll (b). Pages 19b–20 of the *Codex Nuttall*. Images reproduced with the permission of the Akademische Druck-und Verlagsanstalt, Graz.

The repeated, cross-codex appearances of the same eye and brow elaborations reveal that these markings are more than idiosyncratic personal names: they reflect some general idea about elites, an idea that is manifest in a number of individuals in a number of different screenfolds.

If these elaborations do reflect some general idea about elites, we can begin to understand them by turning first to Mixtec ideas about the preciousness of elite bodies. From codical images and colonial alphabetic texts, we know that elite bodies were metaphorically rarified.[40] According to an elite-specific vocabulary, the ruling class did not have legs, but swift "arrows." Elite fingers were not tipped with nails, but with "turquoise." Elite teeth were not organic enamel, but "flints." According to this vocabulary, elite eyes were "beans"–which does not aid in my analysis of optical elaboration. But, again, it is not simply the eyes that are the focus of these markings: brows receive the same augmentations. We are therefore dealing with a division of the body that does not correlate with Western schema.[41]

In contrast, such a merging of eye and face is quite common in Mesoamerican cartographies of the body.[42] Furthermore, it is well attested that this eye-face area is linked to particular bodily processes: this region is understood as a surface that takes in information about the external world, a surface of not just seeing, but of knowing as well.[43] Classic Maya iconography (3rd- to 9th-century) as well as 16th- and 20th-century linguistic and ethnographic sources all reveal the frequency with

39. Furst, Jill. 1987. "The Lords of 'Place of the Ascending Serpent': Dynastic Succession in the Nuttall Obverse." In Gossen, Gary, editor. *Symbol and Meaning Beyond the Closed Community: Essays in Mesoamerican Ideas.* Albany: Institute for Mesoamerican Studies, State University of New York, 57–68. Caso, Alfonso. 1979. *Reyes y Reinos de la Mixteca*. Mexico: Fondo de Cultura Económica, 2, 295. Smith, Mary Elizabeth. 1983. "Regional Points of View in the Mixtec Codices" In Flannery, Kent and Joyce Marcus, editors. *The Cloud People*. New York: Academic Press, 260–266.

40. Jansen, Maarten. 1985. "Las Lenguas Divinas del México Precolonial." *Boletín de Estudios Latinoamericanos y del Caribe* 38, 3-14.

41. Insightful essays on the divisions of the Mesoamerican body have been written by Rosemary Joyce (1998. "Performing the Body in Pre-Hispanic Central America." *Res* 33, 147-165) and John Monaghan (2001. "Physiology, Production, and Gendered Difference: The Evidence from Mixtec and Other Mesoamerican Societies." In Klein, Cecelia, editor. *Gender in Pre-Hispanic America*. Washington D.C.: Dumbarton Oaks, 285 - 304). Cf. Butler, Judith. 1993. *Bodies that Matter: On the Discursive Limits of "Sex."* New York: Routledge.

42. Houston and Taube. "Archaeology," 284–5. López Austin, Alfredo. 1987. *The Human Body and Ideology: Concepts of the Ancient Nahuas*. Salt Lake City: University of Utah Press, 1, 195–197. Delgaty, Colin C. 1964. *Vocabulario Tzotzil de San Andrés, Chiapas*. Mexico: Instituto Lingüístico de Verano, 43. King, Mark. 1982. *Historical Metaphor and the Communication of Legitimacy in the Mixteca 500 B.C.–A.D. 1500*. Unpublished MA Thesis, Vanderbilt University, 76–77. Schoenhals, Alvin, and Louise Shoenhals. 1965. *Vocabulario Mixe de Totontepec*. Mexico: Instituto Lingüistico de Verano y Secretaría de Educación Pública, 124. Pride, Leslie and Kitty Pride. 1970. *Vocabulario Chatino de Tatlaltepec*. Mexico: Instituto Lingüístico de Verano, 30. Sedat, Guillermo. 1955. *Nuevo Diccionario de las Lenguas K'ekchi-Española en Dos Partes*. Chamelco, Guatemala, 166. Colby, Benjamin N. 1969. "Psychological Orientations." In Nash, Manning and Richard Wauchope, editors. *Handbook of Middle American Indians Vol. 6: Social Anthropology*. Austin: University of Texas Press, 421–22.

which Mesoamericans have conceptually merged the face and eyes and have joined acts of seeing to acts of knowing. So instead of glossing these Mixtec images as individualized nicknames like "Smoking Eye" and "Face of Fire"–glosses that privilege Western body divisions–perhaps we should think of them in terms of the bodily processes linked to the eye-face area, as images of smoking and fiery "*vision*"–a vision understood as a merger of *seeing* and *knowing*.

Such a rarefaction of elite bodily processes returns us to the aforementioned elite Mixtec body vocabulary. Just as elite Mixtec bodies were metaphorically rarified, so too were elite bodily processes. Mixtec elites did not die, they simply "fainted;" pregnant elites were likened to budding plants.[44] Perhaps the eye and brow elaborations depicted here (*figure 7*) reflect a similar metaphorization of elite bodily processes–metaphorizations that, alas, have not been lexically recorded. But that such metaphors did exist is attested in Fray Francisco de Alvarado's 1593 Mixtec vocabulary. "To look at the sky" is translated by Alvarado's indigenous collaborators as *yochidzo nduvua nuundi*, "I throw the arrow of my eye."[45] This violent, extromissive image of vision parallels the similarly extrusive images of vision in the Mixtec screenfolds: flames leap forth from the eyes; shells (*yee*, also bodily heat in Mixtec) protrude from elite brows.

Interpreting these images as images of bodily process, as "Feathered Vision" or "*Yawi* Vision," would also be in keeping with what we know about the representation of the senses in both Mixtec and pan-Mesoamerican iconographies. Perhaps the best-known representation of sensation in Mesoamerican art is the speech scroll (*figure 5.4*). Analogous to the eye and brow-emerging flames and smoke of elite vision, speech scrolls make elite song visible by depicting it as colored spirals curling from opened mouths. And just as Mixtec depictions of elite vision are often specified by marking what *kind* of vision is being represented, so too are speech scrolls often marked to indicate the type of speech being articulated. This happens a number of times in the Mixtec corpus. On page 20 of the *Codex Nuttall*, Lord 10 Rain sings a "7 Flower song"–his red and blue speech scroll ends with a flower calendar sign affixed with 7 dots (*figure 8*). On page 7 of the *Codex Selden*, Lady 6 Monkey is accosted by the flint-tipped speech scrolls of Lord 6 Lizard and Lord 2 Alligator. These indicate that Lady 6 Monkey "will die by the knife." Specified speech scrolls are also found in other Mesoamerican visual traditions: from the complex fields of shells

43. López Austin, *Human Body*, 1, 195 – 197. Monaghan and Hamann. "Reading" and "Construcción Cultural."
44. King, *Historical Metaphor*, 67–74.
45. Jansen and Perez, "Ancient Mexican," 93.

and hearts and flowers which fill speech scrolls at Teotihuacan, to the thin lines that link the mouths of Maya elites to their hieroglyphically-encoded utterances on the surfaces of Classic pottery, to the serpent-shaped speech scrolls uttered by Lord Sun in the murals of Chichen Itza.[46]

Speech scrolls may be the best-known representations of Mesoamerican senses, but a recent article by Houston and Taube shows that depictions of sight are also common in Mesoamerican visual culture.[47] As with the Mixtec images I have interpreted as "Smoking Vision" or "Fiery Vision," representations of sight in other Mesoamerican contexts visualize vision as a force projecting from the eye. Thus the Classic Maya hieroglyph for the verb "to see" represents an eye in profile with tendril-like curls of vision erupting from its surface. Thus a star-gazing Nahua priest in the 16th-century *Codex Mendoza* is drawn with a dotted line connecting his socket-bound eye to a disembodied counterpart hovering below the field of stars he observes (*figure 5.6*). So just as Maya and Teotihuacano and Nahua art depicts speech and vision as lines of sensation emerging from mouths and eyes, and just as Maya and Teotihuacano and Nahua art often marks speech scrolls to indicate the type of speech being uttered, so too do Mixtec elaborations of eyes and brows both *depict* vision and specify the *types* of vision possessed by individual elites.

46. Houston and Taube, "Archaeology," 273–281. On flinted speech scrolls, see Maarten Jansen. 1982. *Huisi Tacu*. Amsterdam: CEDLA, 248-49.
47. Houston and Taube, "Archaeology," 281–289.
48. Colby, "Psychological," 421 - 23. Tax, Susan. 1964. "Displacement Activity in Zinacantan." *América Indigena* 24.2, 118–119. Wagley, Charles. 1949. *The Social and Religious Life of a Guatemalan Village*. New York: Memoirs of the American Anthropological Association 71, 103.
49. Vogt, Evon. 1976. *Tortillas for the Gods: A Symbolic Analysis of Zinacanteco Rituals*. Norman: University of Oklahoma Press. Hanks, William. 1990. *Referential Practice: Language and Lived Space Among the Maya*. Chicago: University of Chicago Press. Houston and Taube, "Archaeology."

A further advantage of glossing images of smoking and flaming eyes and brows as "Smoking *Vision*" and "Fiery *Vision*" is that this translation forces us to move beyond rarified elite bodies to consider the extra-somatic interactions of elites in a hierarchical society. And, paradoxically, at the same time we consider the social implications of elite vision, we are also forced to consider the interactions of class with the (dis)ability of sight–a paradox of prestige that Mauss and Derrida would certainly appreciate.

The connections between vision and social power in Mesoamerica have been frequently observed, often briefly.[48] More elaborate explorations of vision include Vogt's work on 20th-century Zinacantan, Hanks's work on visual fields in the 20th-century Yucatan and Houston and Taube's discussions of the hierarchies of Maya sensations.[49] Consider the Classic Maya case: as with Mixtec images of arrow-like vision, of flames shooting

out from the eyes, so too did the Classic Maya conceive of vision as extromissive, as a force projecting out to order social space: "The eye is *procreative*. It not only receives images from the outer world, but positively affects and changes that world through the power of sight."[50] Houston and Taube discuss glyphic and iconographic evidence for a concept of *–ichnal*, a visual field of interaction radiating out from an agent and socially linking the things and persons within its scope. In Classic Maya texts, *–ichnal* always belongs to, emanates from, a ruler or deity. These textual references always indicate that the *–ichnal* field encompasses another person and someone else's action. Again, *–ichnal* is not simply a unidirectional vista, but a field of interaction, "a reciprocal, heavily social context involving other people or beings."[51] However, even if the *–ichnal* was a reciprocal space, it was not an egalitarian one: *–ichnal* was possessed by, oriented around, a god or elite and their fields always "looked down" to encompass those of lower rank. Thus at the same time we are given evidence of the situation-defining visual powers of rulers and gods, we are also always given evidence of subordinates who do not possess such orienting visual fields.

Similar visual contrasts–discussions of enhanced elite vision paired by discussions of the (dis)ability of sight–are also found in the documentary record from early colonial Mesoamerica. For the Nahuas sight was "our total leader," a metaphor that indicates a hierarchy of the senses, a hierarchy also indicated by the associations of rulers with enhanced vision.[52] The Nahua phrase *nixtlapohui*, "I open my eyes," had a metaphorical value of "I am a person of authority."[53] Sixteenth-century Nahuas and Mayas both associated rulers with mirrors–material instruments for enhancing vision.[54] The 16th-century Calepino de Motul Yucatec Maya dictionary includes an entry for *u nen cab/u nen cah*. Although literally "the mirror of a town," the phrase is a metaphor for "the priest-cacique or governor of the land or town, who is the mirror in which everyone looks at themselves."[55] The same metaphor appears in the

50. Houston and Taube, "Archaeology," 281.
51. Houston and Taube, "Archaeology," 288.
52. López Austin, *Human Body*, 1, 177.
53. López Austin, *Human Body*, 2, 32, 95.
54. The association of elites with mirrors extends back to the Formative period, and is well-attested in mirrored staves of rulership in the Classic period–from the Maya k'awil staff to "staves of seeing" held by Teotihuacano and Zapotec rulers. Joyce, Rosemary. 2000. "High Culture, Mesoamerican Civilization, and the Classic Maya Tradition." In Richards, J. and M. van Buren, editors. *Order, Legitimacy, and Wealth in Ancient States.* Cambridge: Cambridge University Press, 71-74. Headrick, Annabeth. 1996. *The Teotihuacan Trinity: UnMASKing the Political Structure*. Unpublished dissertation, University of Texas at Austin, 101-102.
55. "el sacerdote cacique o governador de la tierra o pueblo, que es espejo en que todose miran." Ciudad Real, Fray Antonio de. 1995[1590]. *Calepino de Motul: Diccionario Maya-Español*. Arzápalo Marín, Ramón, editor. Mexico: Universidad Nacional Autónoma de Mexico, 3, 1961, 1528.
56. Consider this mirror-referencing speech of the tlatoani-elect, who calls on Tezcatlipoca to "incline they heart; require that I deserve, that I merit a little, a bit, a firefly-flash of thy torch, thy light, thy mirror, in order that, as if in dreams, as if seeing in dreams [I endure] for a while, a day." Sahagún, Bernardino de.

speeches proclaimed during the installation ceremonies of Nahua rulers.[56] Consider Durán's record of the accession oration of Nezahualpilli:

> O you most powerful of all the kings of earth! The clouds have been dispelled and the darkness in which we lived has fled. The sun has appeared and the light of dawn shines upon us after the darkness which had been caused by the death of the king. The torch which is to illuminate Mexico has been lighted and today we have a mirror to look into.[57]

However, the conceptualization of a ruler as "a mirror in which everyone looks at themselves" has an odd parallel in other beliefs about rulers as beings who *cannot* be looked upon directly. Sahagún reports that, of the Nahua ruler, none might look up at him: none might come face to face with him."[58] Similarly, Díaz del Castillo's account of the court at Tenochtitlán contains a number of references to Moctezuma as a being who could not be looked upon. Consider this description of his retinue in procession:

> Besides these four Chieftains, there were four other great Caciques who supported the canopy over their heads, and many other Lords who walked before the Great Montezuma, sweeping the ground where he would tread and spreading cloths on it, so that he should not tread on the earth. Not one of these Chieftains dared even to think of looking him in the face, but kept their eyes lowered with great reverence, except those four relations, his nephews, who supported him with their arms.[59]

When Moctezuma and his entourage returned to Tenochtitlán, the lesser nobles again "all marched with their eyes fixed on the ground without looking at him." Similar visual taboos applied to audiences with the ruler.[60] Visual taboos also extended to Moctezuma's feasting:

> as soon as he began to eat they placed before him a sort of wooden screen painted over with gold, so that no one should watch him eating. Then the four women stood aside, and four great chieftains who were old men came and stood beside him, and with these Montezuma now and then conversed...They say that these elders were

1950–1982 [1547 – 1585]. *Florentine Codex: General History of the Things of New Spain.* Anderson, Arthur J. D. and Charles E. Dibble, editors and translators. Salt Lake City and Santa Fe: University of Utah Press and School of American Research, 7, 44–45.

57. Durán, Diego. 1964 [1576 – 1579]. *Book of Gods and Rites and the Ancient Calendar.* Heyden, Doris and Fernando Horcasitas, editors and translators. New York: Orion Press, 221.

58. Sahagún, Florentine Codex, 3, 29.

59. Díaz del Castillo, Bernal. 1956 [1580]. *The Discovery and Conquest of Mexico.* García, Genaro, editor and A. P. Maudslay, translator. New York: Grove Press, 193.

60. Díaz del Castillo, *Discovery*, 194, 208, 238.

> his near relations, and were his counselors and judges of law suits, and the dishes and food which Montezuma gave them they ate standing up with much reverence and without looking at his face.[61]

Comparable practices existed among the 16th-century Mixtecs. Antonio de Herrera included a brief description of the Mixteca in his *Historia General*, a chronicle produced from hundreds of reports on the New World secreted in the Archive of the Indies in Seville.[62] One of Herrera's Mixtecan observations describes the visual taboos surrounding elites: "Whosoever had favor enough to speak to the cacique, went in barefoot, without lifting up his eyes."[63]

The paradoxical connections between enhanced vision and the social (dis)ability of sight were thus complex: rulers were beings with enhanced vision, they were mirrors for the people–and yet they were surrounded by taboos that forbid subordinates from looking directly on their exalted bodies.[64] Further paradoxes can be seen when one considers the "mirrors" that elites used to enhance their vision. "Instruments of seeing," material objects whose surfaces enhanced elite seeing-knowing, had been associated with Mesoamerican rulership since the Formative period (1500-300 BC).[65] In many ways, these objects–mirrors of jade or pyrite mosaic, varnished books, pools of mercury, bowls of water–were functionally similar to the representations of elite vision we see in the Mixtec screenfolds. They made tangible the elite powers of sight that were otherwise difficult to directly "witness." They were material supplements to claims of enhanced sensation.

61. Díaz del Castillo, *Discovery*, 210. The golden screen is a curious detail: does it derive from Mesoamerican practice, or from Díaz del Castillo and the numerous connections (in European worldviews and in European trade) of Mesoamerica and Asia? On the often-ignored connections between Asia and the New World, see essays by Roberto Pellerey (1991. "La Cina e il Nuovo Mondo: Il Mito dell'ideografia nella Lingua delle Indie." *Belfagor* 47. 5, 507–522), Nancy Vogeley (1997. "China and the American Indies: a 16th Century 'History.'" *Colonial Latin American Review* 6.2, 165-184), and Carolyn Dean and Dana Leibsohn (2003. "Hybridity and Its Discontents: Considering Visual Culture in Colonial Spanish America." *Colonial Latin American Review* 12.1, 5-35).

62. Echevarria, Roberto González. 1990. *Myth and Archive: A Theory of Latin American Narrative.* Cambridge: Cambridge University Press, 64.

63. Herrera, Antonio de. 1726 [1601 - 1615]. *The General History of the Vast Continent and Islands of America*. Stephens, John, translator. London: J. Batley, 258–267. Cf. Spores, Ronald. 1967. *The Mixtec Kings and Their People*. Norman: University of Oklahoma Press, 175.

64. For a brief discussion of visual taboos on elites in colonial Nahua and Yucatec Maya contexts, see Restall, Matthew. 1996. *The Maya World*. Stanford: Stanford University Press, 253.

65. Carlson, John B. 1993. "The Jade Mirror: An Olmec Concave Jadeite Pendant." In Lange, Frederic W., editor. *Pre-Columbian Jade: New Geological and Cultural Interpretations*. Salt Lake City: University of Utah Press, 242–250. Headrick, *Teotihuacan Trinity*, 101–102. Taube, Karl. 1992. "The Iconography of Mirrors at Teotihuacan." In Berlo, Janet Catherine, editor. *Art, Ideology, and the City of Teotihuacan*. Washington, D.C.: Dumbarton Oaks, 169–204. Taube, Karl. 1995. "The Rainmakers: The Olmec and Their Contribution to Mesoamerican Belief and Ritual." In *The Olmec World: Ritual and Rulership*. Princeton: The Art Museum, Princeton University, 83–104. Tedlock, Dennis. 1996. *Popol Vuh*. 2nd ed. New York: Simon and Schuster, 21, 192, 218. Monaghan and Hamann, "Reading" and "Construcción Cultural."

And yet, as supplements always do, these shining objects raise questions of contradiction: if elite vision were so powerful, so innately enhanced, why did it need a prosthetic object to enhance its clarity?[66] Why did the force of fiery vision need to be further amplified? Paradoxically, the materialization of elite vision in elite objects of scrying undermined the innate bodily power of elite vision. Instruments of seeing, such as books and mirrors, enhanced elite vision at the same time that they challenged its innate competence. This "prosthetic" nature of instruments of seeing, the ways in which they raised questions about the potency of elite vision, is made particularly clear in the arrival of eyeglasses with Iberian colonizers. In Mixtec, Nahua and Zapotec vocabularies from the 16th-century, "eyeglasses" (*antojos*, "before the eyes") are not translated using indigenous terms for eyes or crystals or glass. Rather, eyeglasses are translated using indigenous terms for "mirror."[67] The mirror–an object of power marking the power of elite vision–was in the 16th-century found to be equally applicable to an optical prosthetic for flawed vision. Given the paradoxes of elites needing prosthetics for their innately-enhanced vision, perhaps the conceptual translation of "eyeglasses" into "mirrors" is less incommensurate than it might at first seem.

In sum, this section has looked with a relatively narrowed gaze on the surfaces of Mixtec screenfolds, arguing that visual elaborations of "the eyes of the Mixtecs" provide us with information on broadly-held understandings of elite Mixtec vision. Such elaborated eyes and brows have parallels to representations of speech and vision throughout Classic, Postclassic and early colonial Mesoamerica. And these elaborated eyes and brows, supposedly images of enhanced elite vision, also raise questions about the relationships of class prestige and the (dis)ability of sight. The following section also pursues the (dis)abilities of vision, but it looks, not across social classes, but across time and culture. It explores the peculiarities of academic vision in the 20th- and 21st-century West, and shows how the application of western academic visual techniques to the surfaces of screenfolds has blinded scholars to important aspects of screenfold imagery–even as these visual techniques *have* allowed us to begin to read screenfold narratives.

66. See Derrida's 1976 discussion of supplementarity in "That Dangerous Supplement..." In Spivak, Gayatri, translator. *Of Grammatology*. Baltimore: Johns Hopkins University Press, 141–164.

67. Alvarado, Fray Francisco. 1962 [1593]. *Vocabulario en Lengua Mixteca*. Mexico: Instituto Nacional Indigenista and Instituto Nacional de Antropología e Historia, 22r. Molina, Fray Francisco. 1970 [1571]. *Vocabulario en Lengua Castellana y Mexicana y Mexicana y Castellana*, ed. Miguel León-Portilla. Mexico: Porrua, 11r. Cordoba, Juan de. 1987 [1578]. *Vocabulario en Lengua Zapoteca*. Mexico: Instituto Nacional Indigenista and Instituto Nacional de Antropología e Historia, 185r. On early modern eyeglasses, see Braudel, Fernand. 1973. *Capitalism and Material Life 1400-1800*. New York: Harper and Row, 244–45.

"To view several pages simultaneously": Academic reading and multipage composition

Where the previous section focused its gaze on the details of screenfold imagery, the following pages critique such a narrow visual focus. The visual aesthetics of Mixtec screenfolds–which allow the reader "to view several pages simultaneously" of a gorgeously painted narrative–have been a constant concern for Mixtec scholars. They have inspired non-alphabetic interpretations, as well as frequent alphabetic commentary on the functional implications of long image-bands. But despite this consciousness of the screenfold form, interpretations of Mixtec imagery seldom put this consciousness to interpretive practice. Drawing from the evidence of published descriptions of scholarly reading, the illustrations in articles on the screenfolds and personal experience, I argue that this failure stems from the unconscious application to screenfolds of reading practices peculiar to the modern academic West. I go on to show how alternative modes of looking at screenfolds can reveal levels of information previously unseen. Overall, my goal in this section is not to dismiss what we have learned from prior Westernized gazings on these vibrant paintings. Rather–as we saw at the end of the previous section and as Mauss and Derrida would appreciate–I want to show how powerful ways of looking can also be powerful forms of blindness.

Perhaps because Mixtec research depends so heavily on screenfolds (in contrast to the plentitude of spine-bound pictorial and alphabetic manuscripts from Central Mexico), the particular materiality (and flowing pictography) of screenfold objects has been a constant concern for screenfold scholars. Repeated attempts have been made to translate Mixtec narratives into forms other than the alphabetic academic article. Film has provided one translation medium. John Pohl's 1978 *The sacrifice of 10 Dog and 6 House*, Susan Milbrath's 1993 *Codex Nuttall: an animated interpretation of a Mixtec pictorial screenfold* and Itandehui Jansen's 1997 *Ocho Venado y Seis Mono* have all experimented with translating the dramatic, performative qualities of these visual stories.[68] Elsewhere, Pohl has made a direct comparison

68. Pohl, John M. D., director. 1978. *The Sacrifice of 10 Dog and 6 House*. 16mm, 9 min. Los Angeles: Department of Anthropology, University of California. Discussed in Pohl, John. 1979. "Animated Film: An Interpretive Tool for Mixtec Pictorial Manuscript Studies." *Society for the Anthropology of Visual Communication Newsletter* 7.2, 6–8. Milbrath, Susan, director. 1993. *Codex Nuttall: An Animated Interpretation of a Mixtec Pictorial Screenfold*. Videocassette, 4 minutes. Gainesville: University of Florida Office of Instructional Resources. Jansen, Itandehui, director. 1997. *Ocho Venado y Seis Mono*. Videocassette, 19 minutes. Mexico: El Camino Mexicano. Discussed in Maarten Jansen's "Acknowledgements/Agradecimientos" in Jansen, Maarten, Peter Krofges and Michel R. Oujdik, editors. *The Shadow of Monte Alban: Politics and Historiography in Postclassic Oaxaca, Mexico*. Leiden: CNWS.

of Mixtec screenfolds and the storyboards used to plan 20th-century film and television productions.[69]

Digital multimedia has provided another translation medium. The hypertext version of Bryan Dennis's 1994 dissertation, *Hypertext and the Mixtec Screenfolds*, included digital scans of all seven Mixtec screenfolds. Liza Bakewell and Byron Hamann's 2001 CD-ROM/internet hybrid, *Mesolore: Exploring Mesoamerican Culture*, included scans of pages 14 – 35 of the *Codex Nuttall* and of all twenty pages of the *Codex Selden*.[70] On the one hand, digital formats allow for the relatively inexpensive reproduction of colored images. But they also risk dematerializing the physical properties of the screenfolds, and the limits of screen size constrain how many pages can be viewed at one time.[71] Both *Hypertext* and *Mesolore* worked to overcome these limits, using videos of codex unfoldings, schematic representations of a number of codex pages at once and viewing controls that allowed users to scroll across the surface of a screenfold and so avoid a division of the viewing experience into a series of separate "pages."

But even the confines of black and white print have revealed a consciousness of the unique visual qualities of the screenfolds. Kubler wrote in 1962: "The screenfolds, also misnamed 'codices,' have the advantage, as pleated narrative ribbons, of allowing one to open the book at several places simultaneously, and to consult front and back together (by twisting the opened ribbon). According to a 17th-century Dominican chronicler, the screenfolds were hung as wall ornaments around the dwellings of the lords."[72] Monaghan took up such connections between multi-scene viewing and performative use in 1990: "it would be important for an oral performance that the reader would have before him an entire scene, so he could easily move from one sequence in the work to the next, without having to stop to find his place. The codices solve this problem more neatly than sheet music, as they are screenfolds, which can be spread out in their entirety."[73]

However, despite the frequency of commentary on the visual possibilities offered by the screenfold format, few scholars have exploited these possibilities

69. Byland, Bruce and John M.D. Pohl. 1994. *In the Realm of Eight Deer: The Archaeology of the Mixtec Codices*. Norman, OK: University of Oklahoma Press, 9.
70. Dennis, *Hypertext*. Bakewell, Liza, and Byron Hamann. 2001. *Mesolore: Exploring Mesoamerican Culture*. CD-ROM. Providence: Brown University.
71. Dennis, *Hypertext*, 30-31.
72. Kubler, George. 1962. *The Art and Architecture of Ancient America*. Baltimore: Penguin Books, 100.
73. Monaghan, "Performance," 134. Cf. Dennis, *Hypertext*, 7, 31.

in their own research.[74] Instead, most approaches to the visuality of codex images proceed at a very narrow level: detail by detail, image by image, in a long linear succession. As Troike writes, "In order to read these manuscripts effectively, the painted images must be studied detail by detail."[75] This unit-by-unit approach to screenfold interpretation carries over to the illustration of articles on Mixtec iconography. Full pages are seldom reproduced. Instead, illustrations segment details for focused viewing. As Dennis observes, "most of the illustrations [in Mixtec screenfold scholarship] are of fragments of the screenfold pages. This removes the illustrated signs from the larger written context within which they occur. This greatly hampers the analysis of how sequences of signs are structured."[76] Finally, physical interactions with screenfold-objects often treat these objects as if they were Western books: that is, to be opened to two facing pages at once. I confess that this is how I usually flip through a screenfold; Troike has even argued that this is how Mixtecs themselves accessed their screenfolded texts: "Because of their screenfold form, codices

74. This is not to say that multipage imaging has not been incorporated into Mixtec research–but it is significant that such imaging has (with the exception of King) never addressed the visual properties of viewing several pages at once. Herbert Spinden (1935. "Indian Manuscripts from Southern Mexico." In *Smithsonian Institution Annual Report 1933*. Washington, D. C: Government Printing Office, 430), Mary Elizabeth Smith (*Picture Writing*, 217), Bryan Dennis (*Hypertext*, 121-145), and Ferdinand Anders, Maarten Jansen, and Gabina Aurora Pérez Jiménez (*Origen*, 188) and have all published schematic drawings indicating the differing reading orders of the Mixtec screenfolds, showing how the narrative is channeled through a maze of red guide lines across a number of fold-divided surfaces. Similarly, Nancy Troike's reconstruction of the reading order of the fragments of the *Codex Colombino-Becker* was made possible through a study of the structure of these red guides; her argument is visually accompanied by a schematic map of all 41 surviving pages (1974. The Codex Colombino-Becker. Unpublished dissertation, University of London, 69-70, 88). Troike corrects the reconstruction illustrated by Alfonso Caso and Mary Elizabeth Smith in 1966 (*Interpretation of the Codex Colombino*. Mexico: Sociedad Mexicana de Antropología, 118-119). Elsewhere, as part of an analysis of artistic styles in the same document, Troike republished the same schematic map of all 41 pages, this time marked with numbers and Xs to indicate the position of the human figures ("Studying Style," 126-129). Dennis's discussion of the Lady 3 Flint/Lord 12 Wind narrative in the Codex Nuttall is accompanied by a schematic map of pages 14-22, sub-labeled into thematic sections revealed by his study of narrative details (*Hypertext*, 466). John Pohl (1994. "Mexican Codices, Maps, and Lienzos as Social Contracts." In Boone, Elizabeth H. and Walter D. Mignolo, editors. *Writing Without Words*. Durham: Duke University Press, 144) includes a miniaturized view of pages 26-33 of the Codex Nuttall to illustrate the correlation between codical genealogies and the social geography of "alliance corridors." Mark King ("Hearing," 108) suggests a formal resonance between the colored, spiraling shapes of song scrolls and the similarly colored, spiraling shape of Mixtec narratives as they scroll back and forth across the surface of a fully opened screenfold. Finally, a suggestive but undiscussed diagram of the visual parallels of toponyms on pages 4-1 of the Codex Vienna is found in Anders, Jansen, and Pérez Jiménez. *Origen*, 182. For multi-page analysis in Nahua research, see Navarrete, Federico. 2000. "Path from Aztlan to Mexico: On Visual Narration in Mesoamerican Codices." *Res* 37, 31–48.

75. Troike, "Studying Style," 119.

76. Dennis, *Hypertext*, 22. See also Mundy and Leibsohn. "Of Copies," 341. Note that there have been a few screenfold scholars who have used full-page illustrations as part of their analysis, including Donald Robertson (*Mexican Manuscript*, 223–229), Karl Anton Nowotny (1961. *Tlacuilolli*. Berlin: Verlag Gebr. Mann), Jill Furst (1978. *Codex Vindobonenesis Mexicanus I: A Commentary*. Albany: Institute for Mesoamerican Studies, State University of New York), Federico Navarrete ("Path"), Maarten Jansen (*Huisi Tacu*), Byron Hamann (2002. "The Social Life of Pre-Sunrise Things: Indigenous Mesoamerican Archaeology." *Current Anthropology* 43.3, 351–382), and all of the commentary books included in the 1990s Fondo de Cultura Economica/Graz facsimiles (see note 2).

folded compactly to a size similar to that of a modern book; and, like books, they were normally opened so that two pages were visible side by side."[77]

Reading images detail by detail, page by page, reading a codex by having it open to only two pages at a single time: these are techniques for processing spine-bound alphabetic books. I argue that the peculiarities of modern Western academic reading practices (spatially, bodily, materially) have been unconsciously brought to our reading of the Mixtec screenfolds–and this has important implications for what we see and do not see when we look at screenfold pages. Modern Western academic reading practices involve specific material prostheses and their connected postures of use (sitting in a chair at a relatively small desk, resting the book on the desk) as well as particular techniques of optical page scanning (eyes hovering a foot or so over a desk-resting book, the book open to a pair of facing pages, eyes scanning those pages one at a time, one element at a time, left to right, top to bottom).[78] Despite the pictorial nature of screenfolds, screenfold scholars have tended to parse painted pages as if they were alphabetic books. Such techniques of reading have thus translated screenfolds into spine bound documents, achieving in bodily practice what the Dover *Nuttall* achieves in paper.[79]

77. Troike, Nancy. 1990. "Pre-Hispanic Pictorial Communication: The Codex System of the Mixtec of Oaxaca, Mexico." *Visible Language* 24.1, 75. Troike is not alone in explicitly applying Western forms of book-reading to Mesoamerican screenfolds. In the 16th-century, Peter Martyr D'Anghera (who never traveled to the New World to see screenfolds used in indigenous contexts) also claimed that Mesoamerican screenfolds were read two pages at a time–but he also realized that these books could be unfolded to display their entire surface at once. "For wherever one looks at an open book, two written faces are displayed; two pages appear, and under these are hidden another two *if it is not stretched out at length*, since underneath one folio are many other joined folios (Martyr D'Anghera, Peter. 2001 [1519]. "De Orbe Novo Decades, Fourth Decade." In Houston, Stephen, Oswaldo Chinchilla Mazariegos and David Stuart , editors. *The Decipherment of Ancient Maya Writing*. Norman: University of Oklahoma Press, 26, emphasis mine). Note that King's claim (repeated by Byland and Pohl) that 16th-century Mixtec lexical data gives evidence for the "holding" of screenfolds has been strongly critiqued by Maarten Jansen (Jansen et al. *Shadow*, 3).

78. For the optics of reading, see the work of Elizabeth Eisenstein (1969. "Some Conjectures About the Impact of Printing on Western Society and Thought: A Preliminary Report." *Journal of Modern History* 40, 14), Roger Chartier (1994. *The Order of Books*. Cochrane, Lydia G., translator. Stanford: Stanford University Press, 1-5) and Dana Leibsohn ("Mapping," 136-137). For a study of the effects of academic disciplinarity on techniques of looking, see Goodwin, Charles. 1994. "Professional Vision." *American Anthropologist* 96.3, 606-633.

79. In March of 2002 I presented these claims about the practice of screenfold scholars at the 9th Mixtec Gateway. A number of participants *did* say that they used a variety of physical approaches in reading the screenfolds: dual page flipping was accompanied by unfolding a number of screenfolds at the same time. But, significantly, these comparative unfoldings were explained as enabling parallel scenes from different screenfolds to be compared at the same time–again, a particulate, unit-by-unit approach to screenfold reading. I witnessed such readings at the workshops of the 1st Mixtec Gateway in 1994. Screenfolds were splayed across long conference tables for interpretation, but despite this vast field of opened imagery the readings proceeded page by page, detail by detail. Again, this is not to dismiss this type of approach–I read the screenfolds this way most of the time. And, as I stressed above, Mixtec scholars *are* constantly conscious of the importance of screenfold form. Indeed, this consciousness has led to institutionalized forms of vandalism: both Bruce Byland and Jill Furst have, independently, described buying multiple copies of the spine-bound Dover editions of the *Codex Nuttall* and *Codex Borgia* so that they could cut them apart and, with tape, reassemble their pages into screenfolds.

My goal in these observations is not to dismiss the knowledge gained from the application of peculiarly Western reading practices to emphatically non-Western objects. Indeed, the "eyes of the Mixtecs" section of this essay was generated from desk-resting, facing-page flipping, image-scanning "readings" of Mixtec screenfolds. Rather, my goal is to suggest that these methods of reading, these techniques of physical and conceptual interaction with Mixtec screenfolds, have disabled us from seeing certain levels of visual information. As Kubler alluded above, our only account of how Mixtec screenfolds were read is from the 17th-century. Fray Francisco de Burgoa claimed that the Mixtec screenfolds were displayed by hanging them on the walls of palaces–a practice also suggested by pre-conquest buildings at Mitla and by a 16th-century account from Cholula.[80] Such a physical-visual display would have presented a vista not of a series of discrete pages, but of an unbroken band of painted images. And this unbroken band would have provided distant viewers with significant visual patterns.

80. John Pohl has extensively discussed the mural display of the screenfolds and their performative uses. See Pohl, John. 1994. *The Politics of Symbolism in the Mixtec Codices*. Nashville: Vanderbilt University Publications in Anthropology; and Byland and Pohl. *Realm*, 9. For Mitla, see Pohl, John. 1999. "The Lintel Paintings at Mitla and the Function of the Mitla Palaces." In Kowalski, Jeff Karl, editor. *Mesoamerican Architecture as a Cultural Symbol*. Oxford: Oxford University Press, 176-197. Gabriel de Rojas (1985 [1581]. "Relacion Geográfica de Cholula." In Acuña, René, editor. *Relaciones Geográficas del Siglo XVI, Vol 5: Tlaxcala*. Mexico: Universidad Autónoma de Mexico, 142) describes Cholulan houses with "salas y aposentos, que son más pequeños que los que labran los españoles, bien adornados por de dentro, lucidos con cal y con una tierra amarilla lustrosa, y con historias pintadas o colgadas y esterados con petates muy pintados."

In order to support my claim for the importance of multi-page viewings, the following pages present three brief case studies: one from the *Codex Vienna* and two from the *Codex Nuttall*. I argue that by surveying a number of pages it is possible to see broad structures of visual composition–visual structures that are hidden from view when only a pair of facing pages are considered at the same time. Significantly, these visual structures are also meaningful structures–they conceptually reinforce the small-scale, unit-by-unit narrative readings that have been the traditional focus of Mixtec screenfold research.

The *Codex Vienna* is a document of fifty-two folded "pages." It recounts an epic of creation: the emergence of the landscape of the Mixteca from a world of watery darkness, the origin of humans and the rising of the first sun, the division of the Mixtecan landscape into the five directions. But perhaps the most important event depicted in this creation text is the creation of human covenants with earth and rain–covenants that allowed newly-emerged humans to practice agriculture and thus live as civilized social beings. It is difficult to

overemphasize the importance of these covenants, which have parallels in contemporary Nuyooteco Mixtec society as well as throughout Mesoamerica.[81] And if we consider the broad visual structure of the *Codex Vienna*, we can see how the centrality of these covenants was materialized. The covenants narrative is found on pages 27 and 26 of the *Vienna*, spanning the literal center of the fifty-two page document (*figure 9*). A cosmologically central narrative is therefore made physically central in the *Vienna*'s composition; the covenants narrative occupies a visually central location in this creation story. Furthermore, the compositional properties of the covenants narrative itself would have made it visually striking if viewed from across a courtyard. The images that recount the covenants narrative are extremely small and spatially dense: where most codex pages feature twenty main figures to a page (in grids of four figures by five figures), the covenants narrative features over forty figures packed into seven horizontal rows. The composition and placement of the *Vienna*'s covenant images therefore emphasize the tremendous importance of that narrative: centrally located, visually dense. By considering these compositional properties, we can underscore the importance of these images–an importance that we are already partially aware of from more conventional practices of image by image readings.

The *Codex Nuttall* provides two more illustrative cases. I introduced Lord 12 Wind "Smoking Vision" above; I now return to his story. He appears on the "back" side of the *Codex Nuttall*, a surface painted with an anthology-like series of separate narratives, recorded one after the other in a number of different scribal styles. Pages 14 – 22 (read from right to left) tell the self-contained story of Lady 3 Flint and Lord 12 Wind (*figure 10*). On a number of levels, theirs is the story of the union of earth and sky: earth-born Lady 3 Flint and sky-descended Lord 12 Wind are married on pages 19a and 19b; their union is followed by the birth of plant-human children on page 20. This scene, in turn, is followed on pages 20 and 21 by a militaristic version of the covenants with earth and rain we just encountered in the *Codex Vienna*.[82] I argue that the complimentary parallelisms of these earth-sky unions are multiply reflected in the compositional parallelisms of these 10 "pages" (*figure 10*). The narrative begins and ends (pages 14 and 22) with full-page landscape scenes; the pages between these two bookends are divided by

81. Monaghan, John. 1990. "Sacrifice, Death, and the Origins of Agriculture in the Codex Vienna." *American Antiquity* 55.3, 559-569. Monaghan, John. 1995. *The Covenants with Earth and Rain*. Norman: University of Oklahoma Press. Colby, Benjamin N. and Loren Colby. 1981. *The Daykeeper: The Life and Discourse of an Ixil Diviner*. Cambridge: Harvard University Press, 40-43. Hamann, "Social Life." Joyce, Arthur A. 2000. "The Founding of Monte Albán: Sacred Propositions and Social Practices." In Dobres, M. and J. Robb, editors. *Agency in Archaeology*. London: Routledge, 71-91. Wagley, *Social and Religious*, 130.

82. Hamann, "Social Life," 358-363.

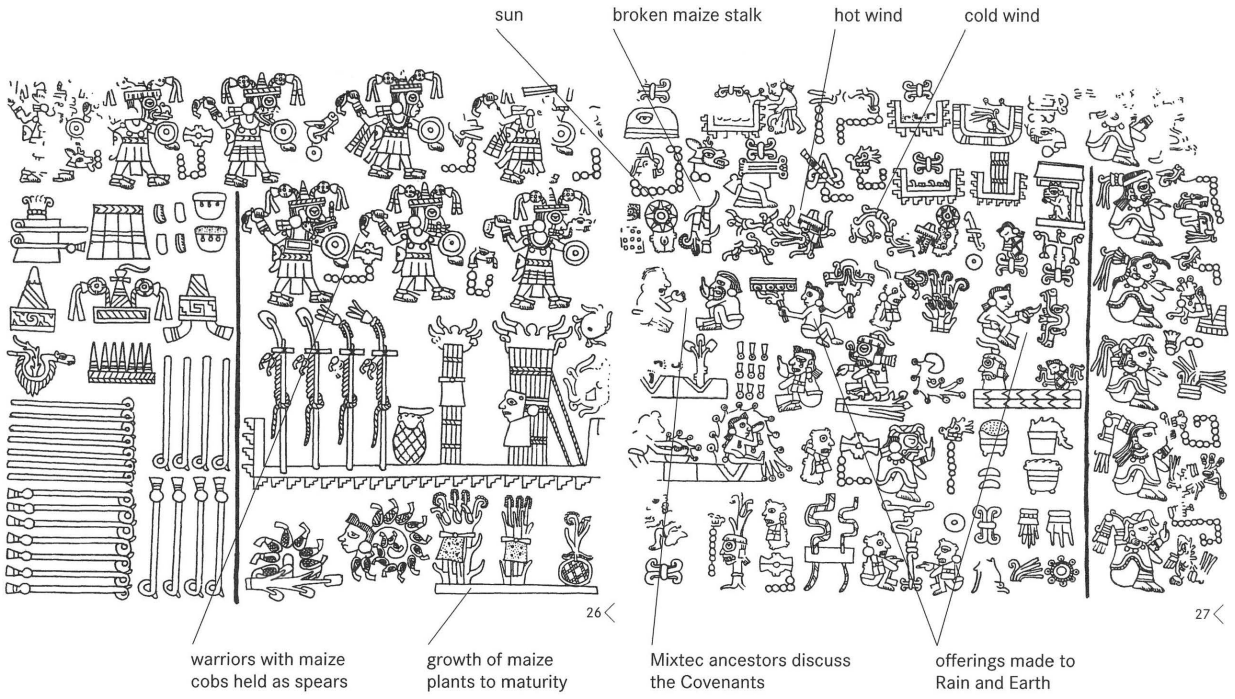


Figure 9 The covenants with earth and rain in the *Codex Vienna*, pages 27–26. Images reproduced with the permission of the Akademische Druck-und Verlagsanstalt, Graz.

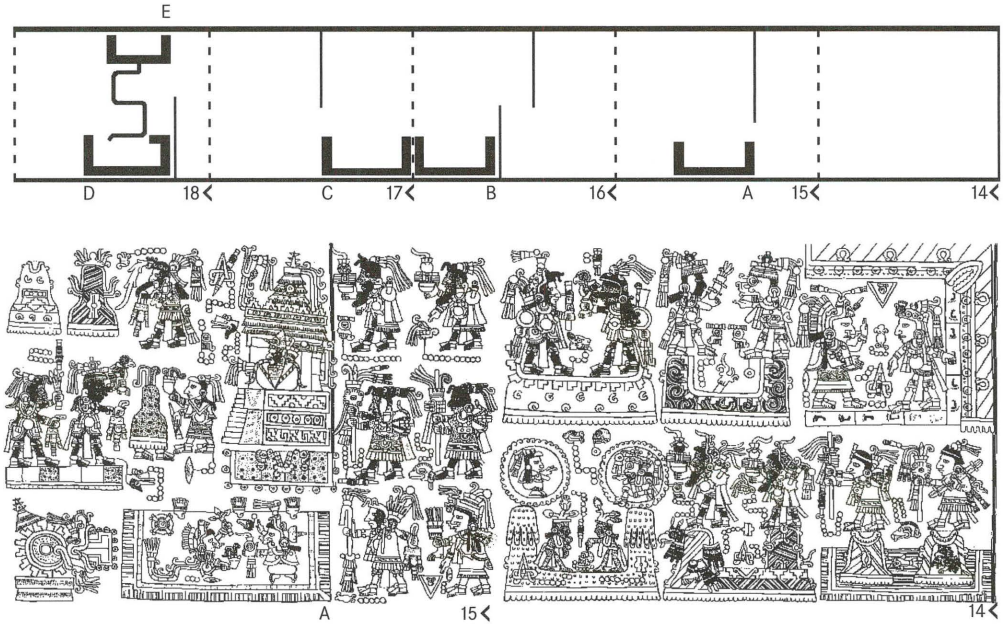
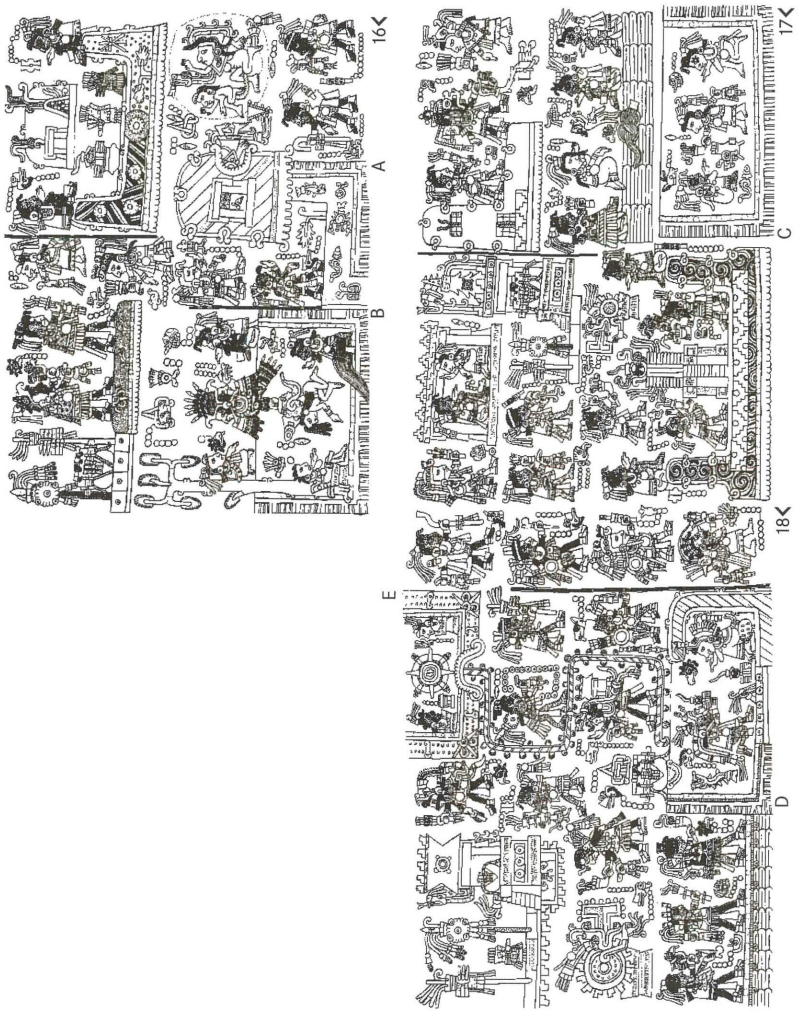
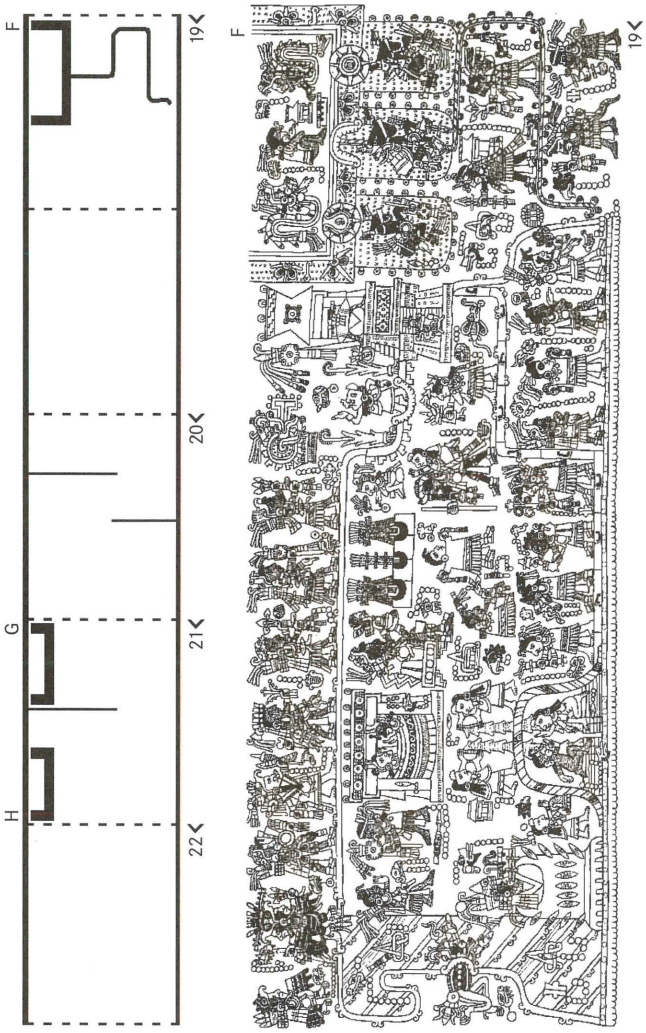


Figure 10 Macrocompositional analysis of pages 14–22 of the *Codex Nuttall*. Rivers, skybands and the cords on which Lord 12 Wind descends from the sky have been indicated in black in the schematic diagram. Images reproduced with the permission of the Akademische Druck-und Verlagsanstalt, Graz. (This image continues on pages 108-110)



Continuing figure 10 originating on page 107.



Continuing figure 10 originating on page 107.

Continuing figure 10 originating on page 107.

a red maze of reading order lines. The narrative begins on page 14 with the emergence of Lady 3 Flint from the earth, but by page 22 she has disappeared from the story: Lord 12 Wind "Smoking Vision" has become the central protagonist. This shift in character focus begins on the two "central" pages of the narrative: Lord 12 Wind first descends from the sky on page 18 (the fifth page from the narrative's beginning) and then repeats his descent on page 19a (the fifth page from the narrative's ending).

The centrally-located page 18 also marks the meeting place of mirrored representations of the "waters of the earth" and the "waters of the sky" (waters separated in the creation story found in the *Codex Vienna*). To explain: four rectangular river channels are depicted on the bottom edges of the first 5 pages of this narrative: one at the center of page 15, one at the left-hand edge of page 16, one right next to it on the right-hand edge of page 16 and one in the center of page 18. Four rivers: the two on pages 15 and 16 spatially mirror those on pages 17 and 18. These four rivers in the first half of the narrative–these four channels of earthly water–are paralleled by four watery skybands in the second half of the narrative. Like the four rivers, these four skybands have a rectangular form. And like the four rivers, these four skybands can be divided into two mirrored pairs. The first skyband hovers directly above the final river at the center of page 18 (which, again, is one of the two central pages for this 10-page narrative). The second skyband is on the left-hand side of the adjacent page, 19a. The third skyband is on the left-hand side of page 21, and the final skyband is on the right-hand side of the same page (separated by a short space from its paginal pair, just as the skybands on pages 18 and 19a are spatially separated). Thus the four bottom-of-the-page rivers on pages 15 – 18 are explicitly mirrored on pages 18 – 21 by four top-of-the-page skybands. And, again, these visual parallelisms have conceptual significance. Dennis has argued that the first five pages of this narrative are dominated by Female/Earth iconography, and the second five pages are dominated by Male/Sky iconography.[83] The mirrored parallelisms between the four rivers and the four skybands underscore the symbolic parallelisms of this ten-page narrative of the unions of earth and sky.

A third example of the "macrocompositional" structures revealed when we survey a number of pages at the same time is found on the genealogy that spans pages 23 – 35 of the *Codex Nuttall*. These pages recount a lineage history focused on the intermarriages of three major dynasties: Tilantongo, Teozacoalco, and Zaachila (*figure 11*). When viewed as a whole, an interesting visual structure emerges across these thirteen pages. The first five are prominently marked by

83. Dennis, *Hypertext*, 427-466.

twelve red-walled buildings, evenly spaced to form four dynamic diagonals. In contrast, these brilliant red buildings disappear on pages 28 – 35 and are replaced by the more subtle golden rectangles of woven palm mats. What do these buildings and mats mean and how does the visual contrast they create relate to the details of the narratives they occupy?

Both red buildings and gold mats have equivalent iconographic functions: they mark images of marriage.[84] Their contrastive deployment across these thirteen pages accents a shift in genealogical focus. Pages 22 – 27 (the palace pages) chart a series of generationally overlapping, short-term genealogies from a number of different polities (but all connecting, in the end, in Tilantongo-born Lord 8 Deer "Jaguar Claw"). In contrast, pages 28 – 35 (the mat pages) record long-term genealogical sequences from only two polities, Teozacoalco and Zaachila (*figure 12*). Thus a differentiation of genealogical *content* is accented through a differentiation of genealogical *form*.[85]

84. Smith, *Picture Writing*, 30.

85. On the problematics of screenfold kinship relations, see the work of Bryan Dennis (*Hypertext*) and Byron Hamann (1998. "First-Born Son of a First-Born Son? Discontinuous Succession in the Codex Selden." *Indiana Journal of Hispanic Literatures* 13, 53-58).

86. Byland and Pohl, *Realm, 132-135*.

But why, specifically, are *buildings* used to unite the heterogeneous genealogies of a number of different places, and why are *mats* used to unite two genealogies linear in time and limited in space? A consideration of the metaphorical meanings mats and buildings suggests a solution. One of the Mixtec terms for "kingdom" was *yuhuitayu*, a compound word meaning "the mat, the throne" or "the mat, the marriage pair." Remember that in contrast to the first section of the genealogy, pages 28 – 35 cover the long term dynastic history of two polities, Teozacoalco (12 generations) and Zaachila (five generations). This section of the genealogy is a history of dynastic succession in two closely connected polities, and so the visual (and spoken-metaphorical) prevalence of "the mat, the throne" on these pages is appropriate.

In contrast, pages 23 – 27 cover a number of different families and places; the longest genealogical list is only 5 generations. In addition, we know that at least one married couple–Lord 5 Alligator and Lady 9 Eagle–were *not* the rulers of a *yuhuitayu*. Lord 5 Alligator (as is shown on page 25) was a priest of Tilantongo, not a ruler of that polity.[86] If any conceptual unity is meant to underlie the visual unity created by the buildings in this section, it cannot be a unity of rulership. Furthermore, the buildings on pages 23 – 27 are not all "palaces"–the building on page 25 is the "Temple of Heaven" at Tilantongo.

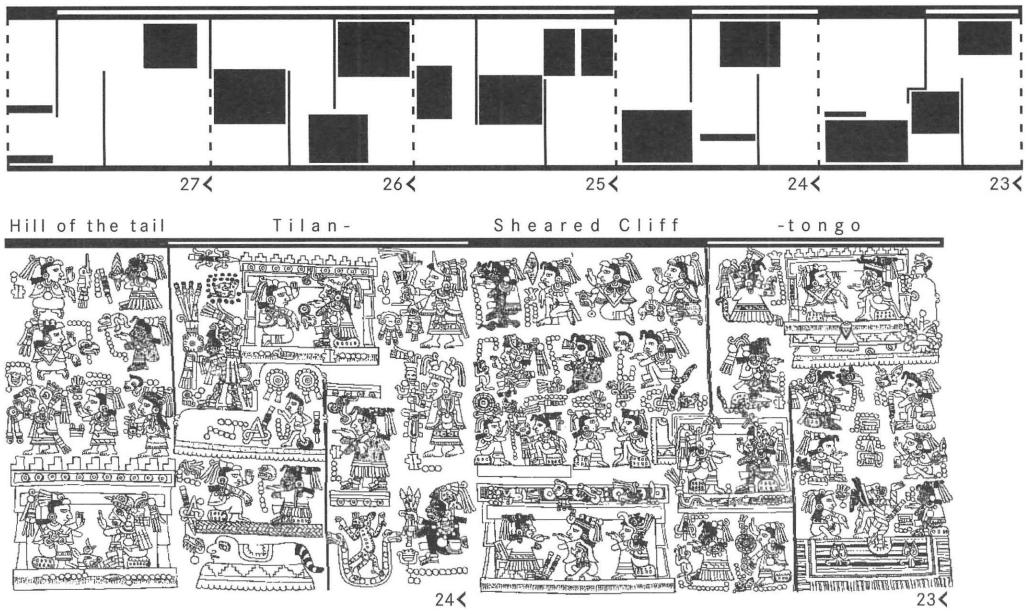
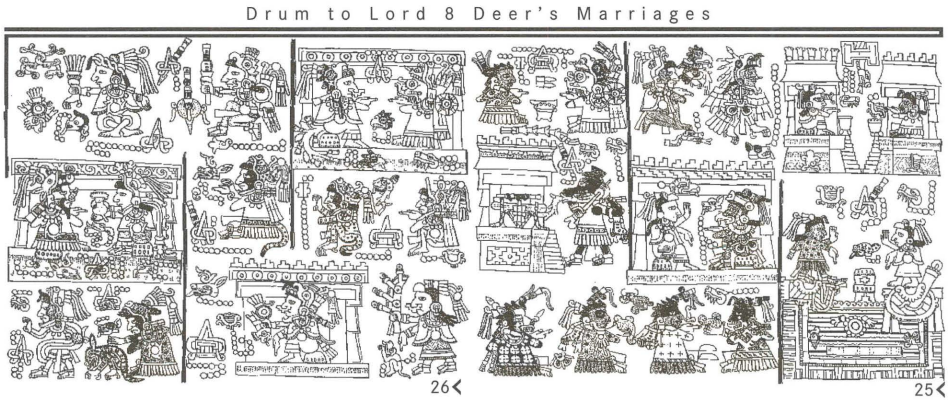


Figure 11 Macrocompositional analysis of pages 23–35 of the *Codex Nuttall*. Houses and mats have been indicated in black in the schematic diagram. Images reproduced with the permission of the Akademische Druck-und Verlagsanstalt, Graz. (This image continues on pages 114-117.)



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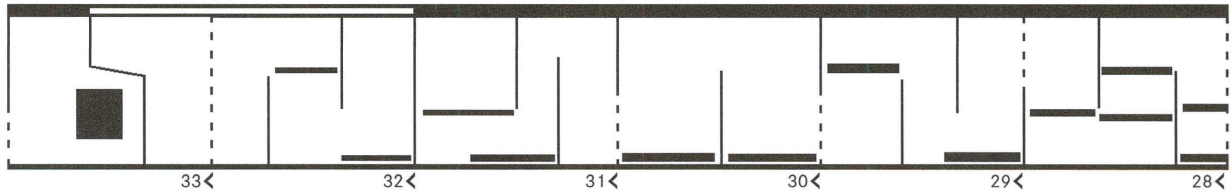
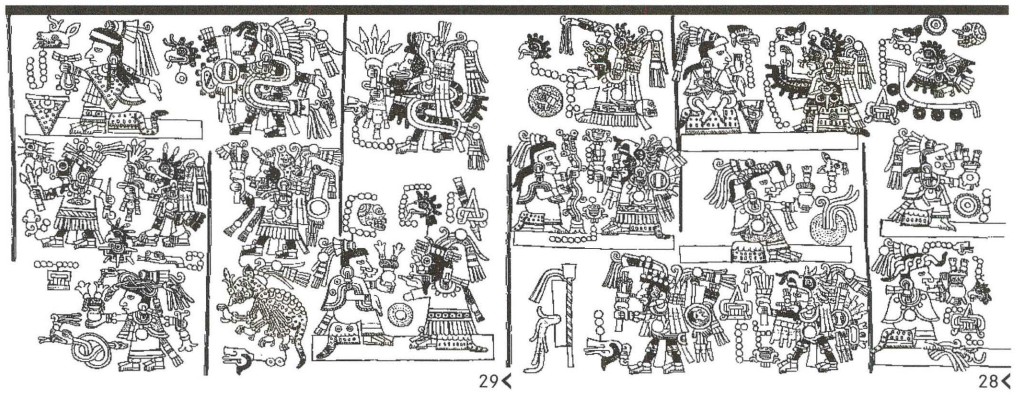


Teozacoalco 1 and 2



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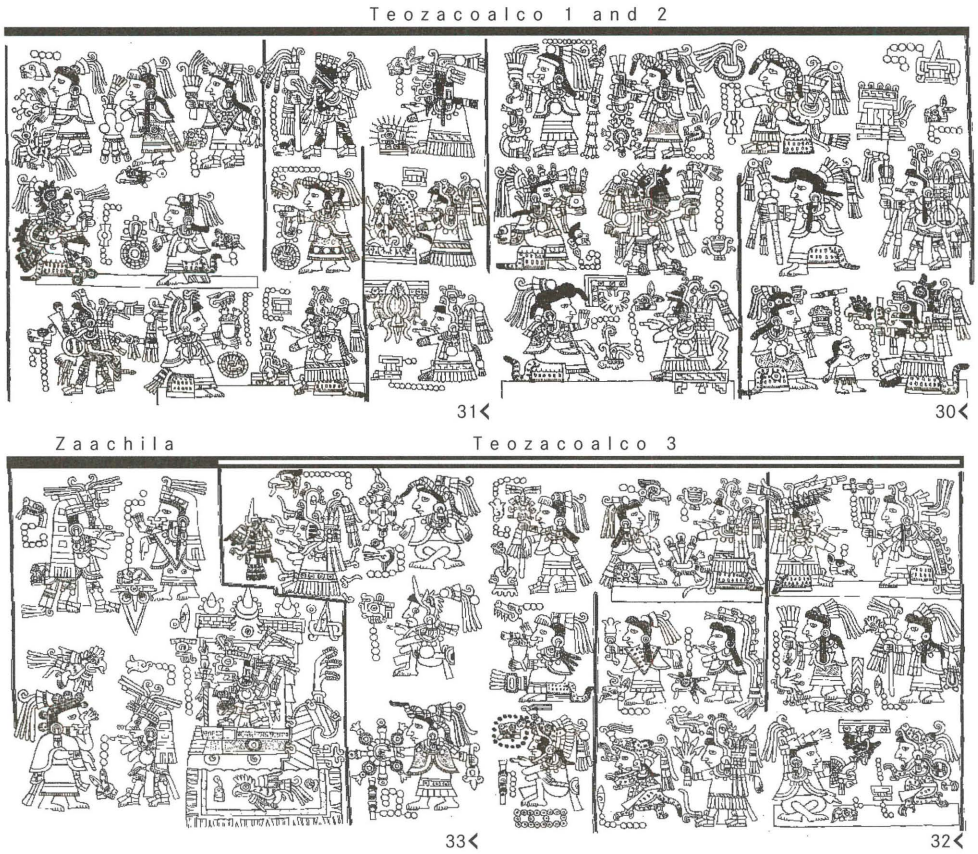

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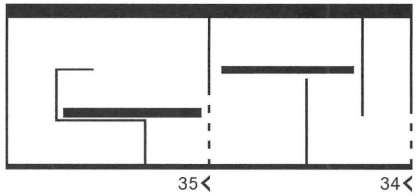
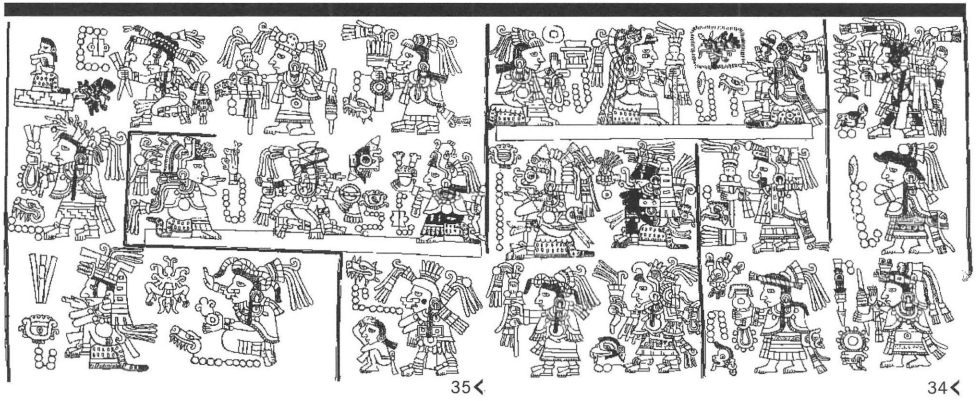


Zaachila



Continuing figure 11 originating on page 113.

However, all of these buildings–these temples and royal palaces and non-royal houses–can be brought together in a single Mixtec category: *huahi*, "house." *Huahi* are houses in general (royal or priestly or non-elite), and a temple is a specific kind of house, a *huahi ñuhu*, a "house of the earth spirit" (and even more specifically, the "Temple of Heaven" shown on page 25 was called the *huahi andehui*–literally, the "House of Heaven"). The house is a central image in Mixtec social relatedness, both in the 16th-century and today. John Monaghan has written extensively on house-based social models among the 20th-century Nuyooteco Mixtec; Alvarado's 1593 vocabulary suggests that these models existed in the 16th-century as well.[87] Family (*familia*) is translated by Alvarado and his Mixtec collaborators as *eehuahindi*: "one house"; *huahi* is also a component in a number of entries for "community."[88] I therefore argue that pages 23 – 27 tell a story of the interrelatedness of a number of different *houses*: the houses of humans (royal and non-royal) and the houses of gods. Indeed, the image of the House of Heaven temple on page 25 shows Lord 5 Alligator "feeding" its central sacred bundle with a stream of blood drawn from his ear: the sharing of substance through food is a common Mixtec technique of kinship creation and household incorporation.[89]

But how can we be sure that the shift in iconography from buildings to mats is a meaningful shift, and not just an artifact of the use of separate original sources for these two differently-focused genealogies? As was mentioned above, the *Codex Nuttall* is an anthology document, created by copying narratives from a number of different sources. One might argue that the genealogy on pages 23 – 27 was copied from a source that just happened to use red buildings to mark marriages, and that the genealogy on pages 28 – 35 was copied from a source that that just happened to use golden mats to mark weddings. Although this may be a factor in the visual contrast, I argue that it is an inadequate explanation. Scribal recopying was not necessarily a mindless, uncreative process: the recopying scribe could intervene and elaborate in what was being transcribed. And we can see that this is true in the palace section of the *Codex Nuttall*. Due to paint seepage through tiny holes in the Nuttall's skin, we know that the genealogies on this "back" side of the codex were painted *after* a long narrative of the life of Tilantongo ruler Lord 8 Deer was painted on the "front" side. The Lord 8 Deer narrative begins by depicting the first and second marriages of Lord 8 Deer's father, Lord 5 Alligator. On what is now numbered page 42 of the *Codex Nuttall*

87. Monaghan. Covenants. Monaghan, John. 1996. "The Mesoamerican Community as a 'Great House.'" *Ethnology* 35.3, 181–194. On *vehe* and *vehe ñuhu* see also Jansen. *Huisi Tacu*, 189.
88. See the entry for *comunidad* in Alvarado. *Vocabulario*, 50r.
89. Monaghan, *Covenants*, 36. Alvarado, *Vocabulario*, 50r.
90. This section-title quotation is taken from Miller, "Introduction," x.

(though in fact it was the first page in the entire document to be painted), the marriage of Lord 5 Alligator to his first wife is shown (*figure 13*). Lord 5 Alligator and Lady 9 Eagle sit facing each other on jaguar skin thrones; they sit surrounded by white space. When the artist of the "back" side of the codex set out to re-depict this wedding in his account of the genealogy of Tilantongo, it is clear from many details of costuming (beaded headbands, nose ornaments, gestures) that he recopied the page 42 image onto page 26. But it was not a mindless recopying. When he painted page 26, he surrounded bride and groom with a red-walled palace, a palace absent from his source on page 42. This addition-in-recopying reveals that the constant repetition of palaces on pages 23 – 27 is a meaningful repetition. By extension, the absence of palaces in the recopying (or original composition?) of the weddings that span pages 28 – 35 is also visually significant.

In sum, this section has shown that three different screenfold sequences were ordered according to "macrocompositional" principles–principles of structure that span a number of pages and that are not seen when visual analysis hovers too closely to the surface of the page. Such macrocompositional principles have been shown to be at work in narratives in two different screenfolds–and we can expect that such principles are at work in others. Again–because this needs emphasis–my argument is not intended to denigrate the importance of detail-by-detail, page-by-page screenfold interpretations. Rather, I have tried to demonstrate that there are additional visual levels to screenfold imagery which reinforce our detail-by-detail analyses, and that these are levels of visual imagery that we cannot see if we do not distance our eyes from the folded-divisions of individual "pages"–if we do not view several pages simultaneously.

Mixtec screenfolds are not the only visual documents to rely on broad compositional bands of unpaginated images. The final section of this paper moves to ethnographic comparison to show how "macrocompositional" techniques were used in another time and place.

"In discussing the Bayeux Tapestry": another return to an unbound pictorial narrative[90]

The Bayeux Tapestry is a 231 foot band of embroidered linen chronicling the competition between Harold Earl of Wessex and William Duke of Normandy for the throne of England (AD 1064 – 1066). The Tapestry has been a repeated point of comparison for Mixtec scholarship, appearing in the discussions of both Smith and Miller.[91] Indeed, Smith's comparison pioneered the

91. Smith, *Picture Writing*, 20–21. Miller, "Introduction," x.

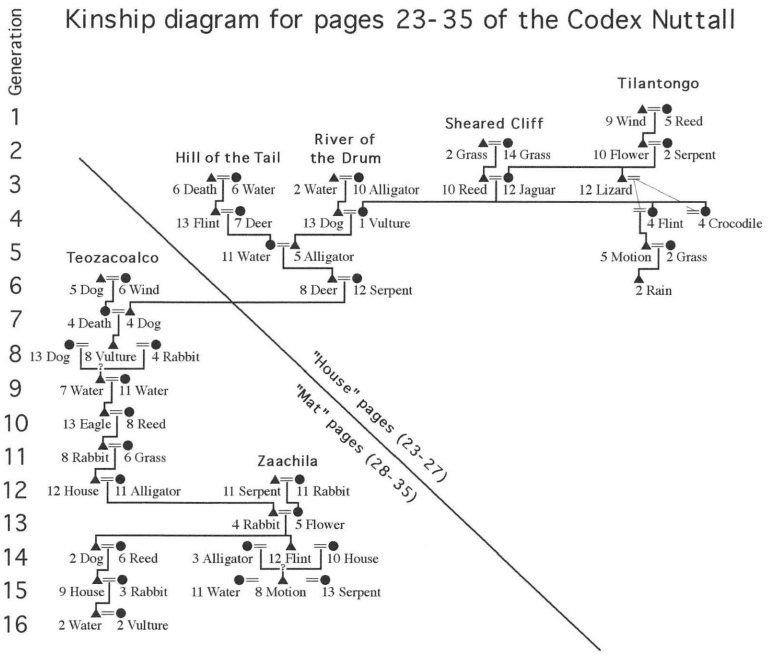


Figure 12 Kinship chart translation of the genealogies on pages 23–35 of the *Codex Nuttall*.

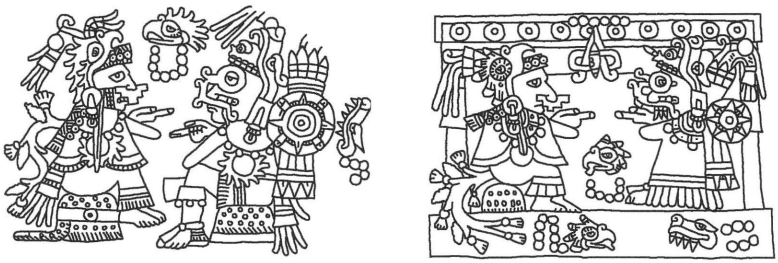


Figure 13 Comparison of the marriages of Lord 5 Alligator and Lady 9 Eagle on pages 42 (left) and 26 (right) of the *Codex Nuttall*. Images reproduced with the permission of the Akademische Druck- und Verlagsanstalt, Graz.

conceptual translations to film and digital media discussed at the beginning of the previous section: "[i]n contrast to the continuous, overlapping, cinematographic battle scenes in the Tapestry, the Mixtec portrayal of conquest is more analogous to a still photograph of one important person in one instant in time."[92] For Smith, the Bayeux Tapestry provides a productive comparative object to the Mixtec screenfolds because of its physical nature (as a long unbroken visual field) and the nature of its narrative (predominantly pictorial, annotated by brief alphabetic captions).[93] In this final section, I argue that the Bayeux Tapestry continues to be a productive comparative object for Mixtec research. Just as I have argued that we must consider the multi-page compositions that would be apparent to readers and performers looking at a wall-displayed screenfold, so too has recent work on the Tapestry stressed its performative usage and considered the broad visual patterns that would have been revealed by the Tapestry's display on the walls of a great hall.

In his introduction to a recent edited volume on the Tapestry, Richard Gameson notes that most reproductions of this band of embroidered linen "dismember the work into small sections" across a series of separate pages–the same dismemberment we have seen with the Dover and La Estampa Mexicana editions of the *Codex Nuttall*.[94] Gameson also notes that "[w]hile there has been much speculation over the years concerning how the Tapestry was originally displayed, the implications of this question for its impact on the beholder have not been fully explored."[95] One exception, however, is the work of Richard Brilliant. Brilliant takes as his starting point the spatial and performative context of the Tapestry's original display; he echoes many of my critiques of the problematic application of modern Western academic reading practices to the flowing images of screenfold surfaces: "The tapestry is obviously no book; its audience is not a reader at a desk but a sizeable

92. Smith, *Picture Writing*, 21. Cf. media/Mesoamerica comparisons by Serge Gruzinski (1993. *The Conquest of Mexico*. Cambridge: Polity Press, 32) and Navarrete ("Path," 37, 44).

93. Smith's observations find resonances in Bayeux research: a number of publications describe the "cinematic" properties of the Tapestry's composition, including essays by Anne Prah-Perochón (1977. "Le Film Animé de la Tapisserie de Bayeux." *Stanford French Review* 1.3, 339–365), Michel Parisse (1983. *La Tapisserie de Bayeux: Un Documentaire du XIe Siècle*. Paris: Denoël, 9, 51, 53–80) and Suzanne Lewis (1999. *The Rhetoric of Power in the Bayeux Tapestry*. Cambridge, Cambridge University Press, xiii, xiv, 8, 11, 25, 36, 43, 75). Lewis (43) also offers cautions about such analogies, as does Richard Brilliant (1991. "The Bayeux Tapestry: a stripped narrative for their eyes and ears." *Word and Image* 7.2, 117).

94. Gameson, Richard, editor. 1996. *The Study of the Bayeux Tapestry*. Woodbridge: The Boydell Press, vii. Similarly, Brilliant ("Bayeux Tapestry," 101) notes that "far too many discussions of the Bayeux Tapestry treat it as if it were a codex and not a continuous strip, publicly displayed in its entirety"–and he is of course using the term "codex" in its original sense, a spine-bound European book.

95. Gameson, *Study*, xii.

viewing audience, grouped together in a public hall and enjoying the common experience of a public artwork...The iconic language of the Tapestry would have to have been translated into common speech in order to make it comprehensible."[96]

Brilliant explores a spatialized reading of the Tapestry by using the standard length-to-width proportions of 11th-century Anglo-Norman halls to propose a reconstruction of how the tapestry may have originally been displayed (*figure 14*). From that display, he considers how broad patterns of narrative would have related to the room and to each other across visual space:

> The Tapestry is not a book to be held close to the eye of a reader and to be seen, or read, in small, isolated bits; despite its continuous pictorial structure, the Tapestry is unlike a motion picture whose rapidly changing images seem to pass before the stationary observer but actually remain fixed within the same oblong frame. The Tapestry did not move but hung in place on four walls; its images did not move but the public eye could move from one colourful scene to another in those large sections of the Tapestry that could be taken in with a single look. The directional flow of scene to scene and their progressive cohesion into episodes were the products of an overriding design.[97]

According to Brilliant's proportional division, each of the corners of the room corresponded to points of narrative transition in the imagery of the Tapestry. The narrative would begin in one corner, showing King Edward the Confessor at Westminster on the English throne. The first "short side" of the Tapestry's display focused on the actions of Harold in England; at the first corner, Harold travels from England to Normandy. The second, "long side" of the Tapestry's narrative focused on Normandy, showing the alliance between William and Harold and Harold's oath of fealty, which, on the death of King Edward of England, Harold breaks by declaring himself King. The second corner shows William preparing to invade England to take back the throne from Harold; the third, "short

96. Brilliant. "Bayeux Tapestry," 109. Bernstein and Lewis have also considered the performative and spatial contexts of the embroidery's original display, but still emphasize the reading of the images as one of close physical scanning. Lewis (*Rhetoric*, 7) writes that the narrow strip of cloth "was clearly designed for close viewing." Bernstein, however, also considers the importance of multiple visual approaches: "it appears that the Tapestry was not only meant to be appreciated from a distance; some of it must have been intended to be studied as closely as a manuscript" (Bernstein, David J. 1986. *The Mystery of the Bayeux Tapestry*. Chicago: University of Chicago Press, 88). Lewis draws analogy between the Tapestry and a musical score (*Rhetoric*, 11), an analogy which both Monaghan and King have made for the Mixtec screenfolds (Monaghan. "Performance," 134. King. "Hearing").
97. Brilliant, "Bayeux Tapestry," 117. Cf. Lewis, *Rhetoric*, 43.

side" depicts the invasion. The fourth, long side depicted the Battle of Hastings, which ends with Harold's death. Alas, the Tapestry is damaged, and its actual narrative conclusion is unknown, although a number of scholars have suggested that it would have shown William's coronation as the King of England–thus the fourth corner of the Tapestry would return the narrative to the image of the King of England with which the narrative began.[98]

In addition to these four great narrative segments, Brilliant also discusses more subtle structural parallels that his proposed spatial arrangement of the Bayeux Tapestry would make apparent. The second side of the tapestry would be centered on the oath of fealty sworn by Harold to William. This central image would in turn be flanked by two equidistant "visual and thematic stops" that serve as critiques of Harold's legitimacy: the genealogically-challenging image of Lady Aelfgyva at the end of the first quarter, and the ill-omened appearance of Halley's Comet over Harold's court at the end of the third quarter. Brilliant suggests a number of other compelling spatio-visual arguments; my brief summary should make clear the productiveness of screenfold and tapestry analogies. Indeed, Brilliant argues that the tapestry probably served as the visual basis of an oral performance, and points out a number of contemporary textual references to songs inspired by embroidered visual narratives.[99] He thus repeatedly explores the social and performative implications for the spatialized display of the Tapestry's narrative.[100]

And, last, note that meta-images of seeing and blindness are repeated themes in the Tapestry.[101] In the first quarter of the narrative, an offending cleric aggressively touches the mysterious Lady Aelfgyva on the face, near her eye; shortly afterwards, an English watchman holds his hand to his eye as he watches the return of Harold from across the Channel. In the last quarter of the narrative (and directly across from the Aelfgyva image, according to Brilliant's spatial layout), William the Conqueror lifts his visor and holds his hand near his eye, revealing himself to his men and assuring them that he has not fallen in battle. And, finally, the Battle of Hastings reaches its climax with an image of death-bringing blindness: Harold is struck down by an arrow, an arrow shot through his eye and into his brain (*figure 15*).

98. See also Bernstein (*Mystery,* 25), Parisse (*Tapisserie*, 36–40), and Lewis (*Rhetoric*, 132).
99. Brilliant, "Bayeux Tapestry," 103–109.
100. See also Bernstein (*Mystery*, 120–121) and Lewis (*Rhetoric*, 79–80, 110).
101. See discussions of the blinding of Harold in Bernstein (*Mystery*, 144–161, 196–197), Brilliant ("Bayeux Tapestry," 101–102) and Lewis (*Rhetoric*, 127–128).

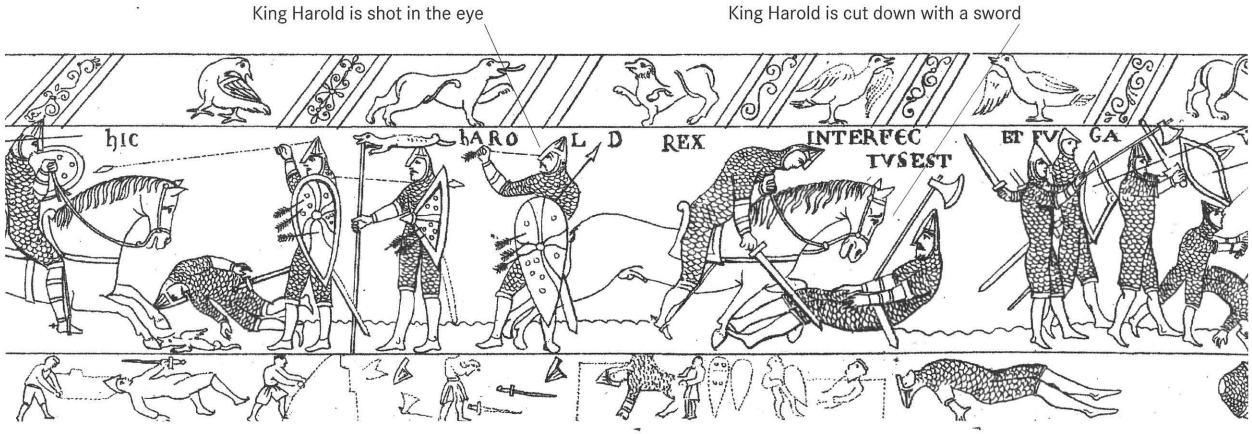


Figure 15. The death of King Harold in the Bayeux Tapestry. Adapted from oujoux, P.-G. 1835. *Histoire Pittoresque de l'Angleterre*. Paris: Alfred Maniquet,1: Plate VIII.

Conclusions

This essay has attempted to look at two issues at once: the discourses and practices of seeing in 15th- and 16th-century Mixtec society, and the discourses and practices of seeing in the 20th- and 21st-century academic West. In writing with this binocular view, I have tried to avoid two Western narcissisms. I have tried to avoid a study of Mesoamerica that is so focused on the Western tradition that it pays no attention to Amerindian discourse or its pre-conquest history.[102] And I have also tried to show that attention to the interactions of Western and Mesoamerican discourses need not be a tale of absolute blindness, in which Western modes of seeing and thinking are so powerful that any attempt at viewing "other" visual modes will simply produce projections of Western desires.[103] But neither should our interpretation of Mesoamerican practices and objects be blind to the Western contexts through which these practices and objects are interpreted. The ways in which Western contexts screen our views of Mesoamerican culture are powerful, yes–but they are also susceptible to analysis as cultural phenomenon of their own. My goal is not to locate and separate a Western screen in order to arrive at a pure indigenous reality. Rather, I hope to show that both are inseparable, and that studying both together is mutually enriching. A small number of studies over the past decade have succeeded in balancing their treatment of "The Rest and the West" in the New World.[104] MacCormack (1991), Cervantes (1994) and Mundy (1998) write on the complex interactions of European and Amerindian perspectives in the colonial encounter; Hutson (in press) balances rich interpretations of pre-Columbian materialities with insightful analyses of the modern contexts of their study.[105] I attempt a similar balance here.

102. The two classic examples of this Western narcissism in New World studies are by Anthony Pagden (1982. *The Fall of Natural Man: The American Indian and the Origins of Comparative Ethnology.* Cambridge: Cambridge University Press) and Tzvetan Todorov (1984. *The Conquest of America: The Question of the Other.* Howard, Richard, translator. New York: Harper and Row). Cf. Porter, David. 2001. *Ideographia: The Chinese Cipher in Early Modern Europe*. Stanford: Stanford University Press, 12. For critiques, see essays by Gordon Brotherston (1986. "Towards a Grammatology of America: Levi-Strauss, Derrida, and the New World." In Barker, Francis, Peter Hulme, Margaret Iversen, and Diana Loxley, editors. *Literature, Politics, and Theory*. London: Meuthen, 190-209) and Deborah Root (1988. "The Imperial Signifier: Todorov and the Conquest of Mexico." *Cultural Critique* 8, 197-219).

103. For a critique of this tendency, see Sahlins, Marshall. 1998. *Waiting for Foucault and Other Aphorisms*. Charlottesville: Prickly Pear Pamphlets, 26.

104. Grafton, Anthony. 1997. "The Rest vs. the West." *New York Review of Books* April 10, 1997, 57-64.

105. MacCormack, Sabine. 1991. *Religion in the Andes: Vision and Imagination in Colonial Peru*. Princeton: Princeton University Press. Cervantes, Fernando. 1994. *The Devil in the New World*. New Haven: Yale University Press. Mundy, Barbara. 1998. "Mapping the Aztec Capital: The 1524 Nuremberg Map of Tenochtitlán, Its Sources and Meanings." *Imago Mundi* 50,11-33. Hutson, "Ways." Other attempts can be found in Lindsay Jones (1995. *Twin City Tales: A Hermeneutical Reassessment of Tula and Chichen Itza*. Niwot: University of Colorado Press) and Anne Pyburn (1998. "Consuming the Maya." *Dialectical Anthropology* 23, 111-129).

This essay has also proposed a new mode of looking at the paintings of Mixtec screenfolds. Again, this mode of seeing is as much a technique of vision as it is of blindness: looking at the screenfolds from a distance, looking for broader visual structures, makes it difficult to see the details of codex imagery that tell the narratives we traditionally look for on screenfold surfaces. Shifting between focused eye-scanning and distanced visual vistas is therefore essential. Indeed (as Javier Urcid emphasized to me), indigenous viewings of these screenfolds probably involved multiple styles of visual engagement–much as screenfold markings of elite eyes and brows reveal a multiplicity of qualities for elite vision. Finally, the macrocompositional portion of this essay has an important conceptual limitation: all of my analyses of broad visual structures were shown to conceptually support the narratives that have already been produced from close visual scanning of screenfold details. But macrocompositional analysis has the potential to contribute even more fully to our understanding of screenfold narratives: it should reveal patterns that are surprising, unexpected, patterns that make us return to the details of screenfold imagery to reveal aspects of their primary narratives that we are currently unable to see.

Screenfold facsimiles consulted

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Codex Egerton 2895. 1965. Graz: Akademische Druck-und Verlagsanstalt, Graz.
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Códice Nuttall. 1974. Mexico: La Estampa

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