Creativity Academies

Curriculum Guide

Acknowledgements

Creativity Academies had its genesis in the thoughts and visions of educators, industry professionals, scientists and artists. This array of individuals is an appropriate reflection of the goals of Creativity Academies: to inspire creative thinking through the integration of science and art, to align a curriculum that generates this inspiration with academic standards established for the State of Hawai'i's high school students, and to provide teachers with the resources that they need to accomplish these goals.

The project owes much to many people over the five years of its implementation. In the earliest planning stages, three individuals provided the creative framework: Georgia Skinner, Chief Officer, Creative Industries Division at the Department of Business, Economic Development and Tourism; Mark Loughridge, Co-Chairman of the Board of Avatar Reality; and Dr. John Rand, professor of Engineering and Physiology at Kapi'olani Community College. An initial grant of $370,00 from DBEDT to Kapi'olani Community College launched the project. Partnerships with the Hawai'i Department of Education proved critical as Creativity Academies supported Kaleiohu Lee's development of standards-based curriculum, instruction and assessments for career and technical education reform efforts that are in line with Federal and State initiatives and moved to align concepts with these new academic standards. The project was actively supported by successive Superintendants, Pat Hamamoto and Kathryn Matayoshi, who allocated $1,900,000 to fund curriculum development, teacher training, and equipment upgrades for DOE classrooms. The input and support from Sherilyn Lau, Educational Specialist at DOE Career and Technical Education, made it possible for Creativity Academies to reach teachers in their classrooms. Staff at both Hawai'i DOE and Kapi'olani Community College assisted greatly in the management of the project funds. Adele Chong at the DOE and Gail Asada, Louise Tsuneyoshi, and Shellie Numazu at KCC merit special recognition for their assistance with financial and personnel support.

Throughout every stage of the project, David Goldberg has been instrumental as the architect and designer. He made real what others could only imagine. He is the author of the materials included in the curriculum. He has shared preliminary versions with DOE teachers, and with the assistance of Kalei Lee, has provided teachers with hands-on experience with implementing Creativity Academies concepts in their teaching.

Below is a listing of individuals who have contributed to the completion of this unique project, including the earliest version of Creativity Academies(CA 1.0) :

Curriculum Design: David Goldberg, Kaleiohu Lee, Troy Milhoan (CA 1.0), André Williams

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Visioning Team: Chris Gargiulo (Kapiʻolani Community College New Media Arts, CA 1.0), David Goldberg, Mark Loughridge (CA 1.0), Georja Skinner DBEDT, Dr. John Rand (Kapiʻolani Community College Physics, CA 1.0)

Leadership: Kapiʻolani Community College Chancellor Leon Richards, Georja Skinner and Sherilyn Lau (Educational Specialist, Instructional Service Branch, Hawaiʻi Department of Education)

Printing: Honolulu Community College Print Shop

All the teachers and students of the various high and middle schools across the state that engaged with Creativity Academies

The curriculum presented here and associated resources are the culmination of the hopes and dreams of all of us. Our hope is that Creativity Academies will be that inspiration for creative thinking.

Louise Pagotto
Vice Chancellor for Academic Affairs Kapiʻolani Community College
Principal Investigator, Creativity Academies

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Introduction

Creativity Academies (CA) views the modern communications landscape as sophisticated enough to treat as a second "layer" of nature, and believes that Hawai'i's students deserve to understand this new nature on their own terms. Meeting this goal requires teaching analytic thinking, hands-on production experience, and an acknowledgement that our students are an "indigenous people" of this new nature.

In a world where the primary impact of modern communications is visual, it must be emphasized that first and foremost our students *see*. One's primary experience with the world is effectively cinematic, not musical or literary. We exist in spaces built out of still and moving images, and those spaces change as we move through them. Even when immobile before a screen, or turning pages with deliberation, the contents of one's visual frame are always in motion. Creativity Academies views all of the individual disciplines of design that contribute to a communications landscape as secondary to the cinematic impact of their integration in our visual field.

Because everyone has an intuitive understanding of the moving image based on a lifetime of exposure, we begin an exploration and analysis of visual communication from this point of first-person immersion. Tools, principles, theories and strategies emerge, coalesce and flow from this unified state. The natural field of vision is selectively subdivided into frames which are then categorized as communication objects such as signs, posters, billboards, pages, shop windows, and T-shirts.

Once, people relied on live performance to deliver charged emotional experiences; they were often highly localized, sometimes even limited to one's own family or immediate community. Today we look to successful and popular commercials, advertisements, branding campaigns and sometimes even public service announcements as examples of what can be accomplished when a specific message is perfectly combined with powerful sounds and/or images.

The most influential forms of artistic expression and social relationships are now, to one degree or another, at the service of commercial communication. Whether considering technology or the content, modern communication depends on highly creative and sophisticated approaches to delivering what is essentially the same message. We accept and even anticipate all manner of creative efforts by Professional Communicators to design experiences that takes us from one state: A) "pay attention…" to B) "…now act." This message hasn't changed since the days of hand-painted signs hanging above shop entrances.

Late 19th century Sears & Roebuck catalog advertising early "home theaters." The "complete outfit" cost $8.95 then, which is about $225 in 2012 dollars.

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Visual communication is as pervasive as gravity and light, and its features, effects, and delivery techniques are consistent enough to have rules and laws. Sampling the work of thinkers such as Claude Shannon (pioneer of information theory), Marshall McLuhan (coiner of "the medium is the message," and the global village concept), Roland Barthes (semiotics), Sut Jhally (critic of advertising as an intimate part of everyday emotional life) and Jean Kilbourne (documentarian of and activist against the exploitation of the female image) reveals a long and deep history of media analysis and criticism.

However, students are generally not exposed to such theorists, largely due to lack of teacher experience with such specialized knowledge, and because they can seem (correctly) esoteric. The Internet and the mainstream presentation of many of these individuals' ideas has helped a little, but their messages, unfortunately, can be lost among the very clutter that they talk about. Most of us simply don't care about the principles of communication any more than we care about the laws of physics.

People accept the world of communication exactly the way it is, and this is why people can be stimulated by a snack commercial that features a child slapping his father in the face. Professional Communicators understand that the content of a message can be irrelevant so long as it produces a reaction in the receiver. That reaction, if effectively connected to the brand being promoted through the advertisement, can reinforce loyalty, cultivate fresh interest, and overcome resistance or ambivalence.

QUICK LITERACY:
1 | What the Doritos brand looks like now: http://goo.gl/746Xn

2 | The above-mentioned Doritos "slap" video:
http://www.youtube.com/watch?v=JwQV6RGUuZ0

Rapid developments in communications technology and financial strategy have produced the modern communications landscape: complex, fragmented, profit-driven, highly competitive, always active, and increasingly plugged into our social lives. In this world, relatively private or localized practices such as rumor and gossip have been become extensions of advertising.

Publicizing what people once did anonymously or in private has become a significant part of communications and marketing strategies employed by the largest corporations on the planet. This is why Professional Communicators make the term "viral" a part of their vocabulary.

Students are born into this world, and though they naturally possess the means to engage and interpret, they generally develop limited critical capacities. If the content of the current communications landscape is like water in an aquarium, then our students are fish unaware of the medium that surrounds and sustains them. To be trained in communication arts is to be taken out of the aquarium with the expectation that lungs will evolve when he truth is, amphibiousness must be engineered.

Clearly this would be a challenge for any young person, for there are so few incentives to take control over one's media engagement habits. It is much more rewarding and pleasurable to be carried along by its constant currents of change and development. In addition, there are seemingly endless opportunities for young people to define their tastes, habits and identity in terms of commercial communications. Luckily, aspects of living in Hawai'i blunt some of the effects of modern communications, notably constraints on the scale and location of outdoor advertising, and a local culture that is based on appreciating nature and pursuing physical activities.

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In short, Hawai‘i students aren’t programmed in quite the same way as their mainland counterparts. Every student knows this on some level, and they have gut feelings that align with a sense of preserving that difference even if they can’t express their understanding. But few, particularly on O‘ahu, would want to live in a Hawai‘i that did not have mainland amenities in the form of coffee, clothing and automotive chains, big box stores, or local lifestyle brands that adapt global trends to Hawai‘i aesthetics.

EXERCISE: DEFEND HAWAII? What does it mean?
Google: http://goo.gl/u3Saf

Clearly the young people of Hawai‘i are in no position to carry out an armed revolution against... who? So how and why is the aesthetic and sentiment popular? Explore the blog (http://www.defendhawaii.com/blog/) and also critique the design.

At the same time, “perfect” weather, a relatively easygoing attitude towards life, and limited diversity in modern professional careers does not produce the same mentality or awareness found in the mainland cities where our communications landscape is defined, designed, and marketed. Nevertheless, anticipating further economic development in our creative industries, we expect local students to look to professional communications in Hawai‘i as a viable career path.

Creativity Academies believes that Professional Communications is indeed a realistic career path for our students, and that Hawai‘i’s unique culture and history can inform their communication arts education. But not by borrowing from indigenous aesthetics, recycling clichés and stereotypes, or applying foreign design standards to local problems.

Life in Hawai‘i is constrained by a hard limit: if it becomes too expensive for corporations to bring things here, fewer things will come to here. Without an extremely powerful campaign of community-driven public communication, short-term economic and political interests will always trump longer-term thinking.

This is ultimately a problem of energy, which is required to design, produce, market, distribute, consume and dispose of things.

Energy is increasingly expensive.

The Professional Communicator

We refer to the individual who chooses to navigate, exploit or modify a communications landscape for profit as a Professional Communicator. He or she is much more than a designer specializing in a narrow medium such as graphics, sound, fashion or interactivity.

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Though strong ideas and business plans are not (yet) included, right now anyone can reach into the cloud and pull down a fully functioning website, ripe with the current generation of aesthetic and functional bells and whistles. Meanwhile, the majority of entry level day-to-day digital production work can be outsourced, and giants such as Amazon and Google are offering scalable access to their massive computing, storage and analytic resources for the introductory price of free.

Couple this rough sketch of modern computing foundations with a market structure that thrives on the homogenization of taste and consumption, and one can imagine a near future where the majority of what students are being trained to do as specialists will disappear into template-driven automation. So how do we imagine the individual who is on the "cutting edge" without being a radical or an experimental artist?

Though Professional Communicators will be experts in the capabilities of the latest media and network authoring platforms–and always tracking the best stuff that gets made with them–they will only push pixels at the highest levels of abstraction.

Imagine what Steve Jobs would have attempted to introduce to the world–for better and for worse–if all of his dream products were available yesterday.

The Professional Communicator should be thought of as a symphonic conductor or big band leader. They may have an instrument that they favor (like Duke Ellington on piano), or they might wield a baton. Either way they will lead joint teams of humans, machines and programs that can shape social networks, commission work from design studios, search and summarize databases and output everything to multiple platforms.

This is not to say that talent or artistic and technical ingenuity will vanish. The Professional Communicator will be deeply concerned with developing and employing the standards that individuals in the workaday creative production professions will pursue. Such requirements demand a profoundly integrated interdisciplinary literacy, the early stages of which are expressed through the power and dynamics of modern digital communications and production technologies.

The Professional Communicator's work will blossom wherever he or she happens to be standing: using voice control, natural language processing, real time translation, nimble financial software, gestures that aren't restricted to touching a 2D surface, and operating systems that know exactly who she or he is.

The Professional Communicator is an archetype from the near future that will accommodate and manipulate data, technology, media, social relations and physical space. Though they will write, speak and present constantly, they will rarely type.

This is not science fiction.

Today's students are already Professional Communicator larvae; they

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use the web, read books, manage YouTube channels, play real time multiplayer games in persistent virtual worlds, go to school, write, critique and sustain brands, pursue lifestyles, and design many aspects of their own lives. All of these activities and more are integrated through always-on socially driven communications technologies that record or in some way document every single thing they do. This is the back side (yet primary function) of the services offered by a company/platform like Instagram, Twitter, Vine, Facebook, Google, Amazon, Microsoft, or Apple.

Students are largely unconscious of this situation, and though unconsciousness married to institutional limitations thwarts proactive or anticipatory approaches to education, you would not be reading this document if there were not a real opportunity to present a different perspective. The Arts and Communication Core Standards can serve as an effective foundation for creating the Professional Communicator class.

Creativity Academies recognizes that the future lies in arts and communications because that is the end to which the majority of mainstream technology is being directed; we are not considering specialized systems for the military, finance or scientific sectors.

From Pinterest and Tumblr, to World of Warcraft and Etsy.com, people are living their lives in terms of electronically mediated platforms for sharing narrative, aesthetics and day-to-day experience. Apps, games, photo filters, character customizers, timelines, and dashboards all provide access to narrow channels of the design profession. Even if it is produced through templates, pre-written scripts and relatively limited sets of expressive options, design has become a common language. Further, all of these platforms are configured for commerce and will only become more so; even if nothing else were to evolve, whatever careers students pursue will be embedded in them

The Arts and Communications Core outlines a broad set of student proficiencies and general course content that the Creativity Academies Curriculum Guide strives to enhance with the concept of Professional Communication as meta-design: the design of design. The goal is to encourage both students and teachers to begin thinking about a future that will see various forms of communications career tracks integrated into a much broader system.

What students and teachers deserve is high quality “food for thought” that will help them deepen their exploration of the near future. Teaching toward a profession that doesn’t quite exist yet is the appetizer. What then does the entire meal look like?

Hawai‘i-as-client

If Professional Communication is meta-design, delivering projects that exist across multiple media, by definition embracing history, and drawing on skills from various backgrounds, who is the client? Hawai‘i, and not a Hawai‘i based on an exclusive past or shortsighted future.

What does Hawai‘i-as-client want? It wants to escape or ignore its material and cultural thermodynamic limitations. But it also wants far more independence and innovation in culture, economics, ecology and energy than it has now. Hawai‘i-as-client deserves to see some good mockups of its possible futures, some good story pitches, and the results of brainstorming and mind-mapping sessions executed by people who actually have something at stake.

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And who might they be? Hawai'i's young people of course: public school students who are facing a future that might not have a middle class, in a place that is entirely dependent on the fantasies of middle class people to finance its existence.

Considering only the population that remains in the state after graduation, skillfully designed posters and CD covers clearly won't be enough to meet Hawai'i-as-client's needs. And neither will a handful of interior designers and web developers competing for jobs serving an even smaller number of hotels... unless of course more hotels are built! It is doubtful if even the vast state bureaucracy can support enough local designers to make pursuit of the profession worth it. Would they end up communicating anything that Hawai'i-as-client actually needs to evolve?

Are tourist-friendly stories of Hawai'i's sunsets, fern forests, perfectly cresting waves and sea life the only ones that can be told?

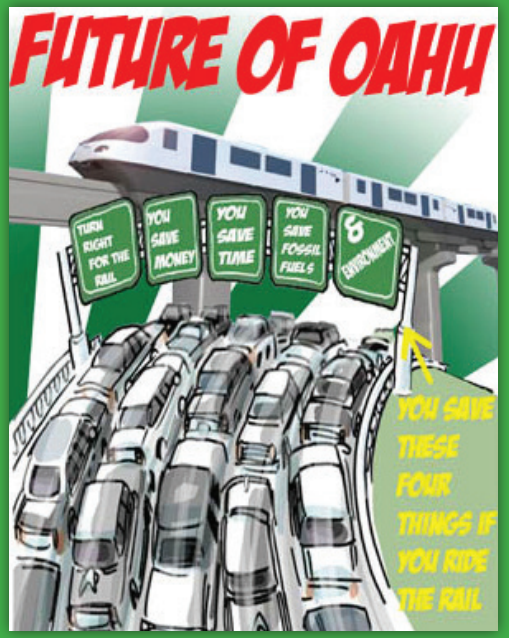
No.

The Creativity Academies Curriculum Guide is less about teaching specific audiovisual communication doctrines and techniques than it is about teaching and encouraging deep discussion of how audiovisual communication has informed everything else in the world.

By teaching students to recognize the impacts, echoes and structures of audiovisual communication in the physical spaces they occupy, the social relations they engage in, the media they consume, and the very thoughts in their heads, they can only become better practitioners of the field's formal techniques... which most Communication Arts teachers tare already presenting with a great deal of proficiency.

EXAMPLE (ACO 2.2, 3.1, 3.3): Rail Posters

Though there are multiple student competitions in various art, design and production categories across the state, generally, student efforts at commercial communication receive limited exposure except where it is politically advantageous. A 2011 high school poster design contest promoting O'ahu's rail construction initiative is a good example.



K. Castillo, Radford High School

In this competition the entrants displayed high levels of artistic ability and technical capacity, but they were conceptually shallow.

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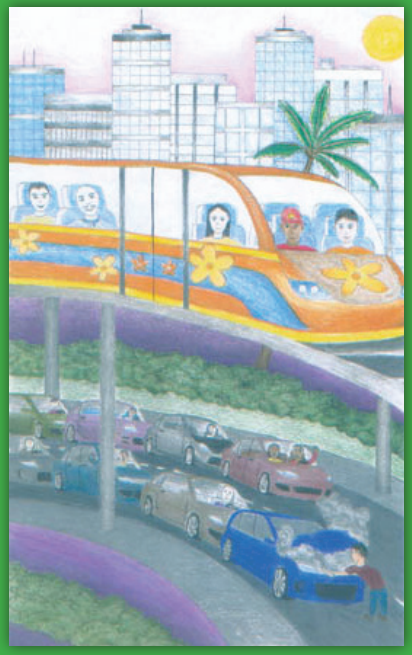
Demonstrating a fairly limited understanding of either side of the rail issue on the students' part, most messages boiled down to utopian presentations of rail beating traffic.

Ironically, in "Should Have Caught the Rail," despite a rather clever underlying argument that one person can make all the difference, far fewer people are depicted riding the train than using cars.



J. P. Nartatez, Farrington High School
"Should Have Caught The Rail" (Winner)

In many other examples students didn't show rail alleviating traffic at all, but only coexisting with current gridlock. Such an oversight is significant given that one of the clearest visual arguments for rail's advantages over traffic would be packed trains and empty highways!

One of the more emotionally compelling and conceptually subtle but non-winning examples, "No More Waiting," is a moody composition featuring a brooding anime female backlit by streetlights. The entry can be read as a critique of O'ahu's existing bus system, which sometimes leaves commuters stranded, and a statement that O'ahu residents can no longer afford to wait for rail to be developed. Here irony strikes again, as the student represents Waianae High School and is part of a community that may not ever be served by rail. "No More Waiting" says more about the complex reality of the project than anything designed by the finalists.

"No More Waiting"
Fili M., Waianae High School

EXAMPLE: CD Cover

In a different public presentation of O'ahu student work at the Honolulu Main Library, samples from the Roosevelt High School Arts and Communication Academy included several CD cover designs. Where the content of

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the rail projects was overdetermined by the subject matter, these CD sleeves were perhaps underconstrained in favor of requiring the students to make personal connections to their design efforts. Song titles and cover design elements were tied to autobiographical statements, and expressing a personal association with an animal was a requirement.

E. Huang's cover shows an ability to think about color, form and tone on symbolic levels.

From this example and many others that were on display at the Main Library, is clear that our students are ready to talk deeply and thoroughly about themselves. These art and design statements are perhaps better indicators of what our young people think about life in Hawai'i than a traditional survey. Their ability to demonstrate the capacity to do reflective, interpretive, semiotically-driven work is highly encouraging.

The rail posters and Roosevelt showcase present evidence of a massive amount of creative energy that lacks a unifying theoretical framework. Obviously Hawai'i's teachers and politicians know how to get our students to produce great work. Can we not combine the civic target of one project with the highly personalized expressions of the other? Can we do so with a lightweight set of concepts that can be adapted to various levels of teaching and resources? Can we keep such an effort student-focused, letting them define their approach to the communications landscape?

EXAMPLE: Local efforts

Stills from IN4MATION's video collaboration with the band Ooklah Da Moc, promoting Casio's G-SHOCK sport watch.

Using activities and locations, each sequence is carefully composed to authentically (and seductively) reflect contemporary local lifestyles, and still promote the product of a Japanese multinational corporation. Watch the full video at http://vimeo.com/25327518.

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Creativity Academies believes that in communication arts, the idea is far more important than the tool. The Creativity Academies Curriculum Guide invites teachers (and motivated students) to:

1 | Explore communication arts from the inside out, as consumers and observers.

2 | Become grounded in an accessible set of conceptual approaches to communication.

3 | Explore these concepts through direct engagement, via production tools.

Chapter Overviews

The Curriculum Guide is divided into five chapters and a conclusion/opening.

Chapter 1: Communication, Space, and Energy addresses ACO 1.2, ACO 1.3, ACO 3.1, ACO 3.3, and ACO 5.1. Its goals are: 1) Understand the highly layered, simultaneous nature of contemporary communication; 2) Understand some generalizations about how messages interact with their receivers; 3) Understand the different spaces that communication takes place in: mental, physical, social and communication; 4) Understand the limits of space and constraints on communication; 5) Understand the role that time, duration and intensity play in sending, distributing and receiving messages; 6) Understand how the different communications spaces are integrated through the Communications Loop.

Chapter 2: Art and Design addresses ACO 1.1, ACO 1.2, ACO 1.3, ACO 2.2, ACO 3.1. Its goals are: 1) Understand that traditional historical models of art history and design are now just so much more information that is available online and in the real world; 2) In light of (1), recognize core expressions of human visual history that have been passed down through millennia and continue to inform the latest media humans create; 3) Explore a compressed and abbreviated timeline of significant mo(ve)ments in art and design; 4) Understand the Creativity Academies conceptual definitions of art and design.

Chapter 3: Mediation addresses ACO 1.2, ACO 1.3, ACO 3.1, ACO 3.3, ACO 5.1. Its goals are: 1) Understand that communication takes place on multiple levels simultaneously. These levels are structured by language, laws and technology; 2) Understand mediation as the increasingly complex intervention of communications strategies and technologies between people and the world around them; 3) Recognize narrative and style as the components of a message and understand how successful communication requires that attention be paid to both; 4) Understand the concept of an audience and how Professional Communicators model them via sampling, and relate to them via targeting.

Chapter 4: Critical Visualization Concepts addresses ACO 1.1, ACO 1.3, ACO 2.1, ACO 2.2, ACO 2.3, ACO 3.1, ACO 3.1, ACO 3.3, ACO 5.1. Its goals: 1) Thoroughly understand the roots of visual communication in the West and their ongoing influence on contemporary communication; 2) Understand the CA concept of Critical Visualization: a framework that leverages students' existing cinematic and digital literacy to create a context for the creation and critique of communications.

Chapter 5: The Communications Landscape addresses ACO 1.0, ACO 1.3, ACO 2.1, ACO 3.0, ACO 3.2, ACO 3.3, ACO 5.0. Its goals: 1) Understand signs, signals and basic semiotics as the foundation of communications, and develop an appropriate theoretical vocabulary; 2) Understand the concept of a communications model for the analysis and simulation of a systems and individuals; 3) Understand the

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essential role that human perception, memory, and attention play in communication; 4) Understand the ten channels that CA defines as the means of sending and receiving messages; 5) Understand the CA concept of a reaction path as a specific communications analysis tactic.

Conventions Used In This Guide

The Curriculum Guide should be thought of as an overlay, not necessarily as a fixed narrative or rubric. Though the content aligns with Arts and Communication Core Standards, this is not an algorithm or an instruction guide; readers are expected to think for themselves, and actively engage the text with focus and attention.

This guide is meant to be read in no particular order. The reader is welcome to search for which of the Arts and Communication ACO points are addressed by which chapters (see the summary on each chapter's lead page), read the guide front to back, randomly access it, or use the table of contents.

RED EMPHASIS signifies core call-out concepts. Red emphasizes chapter summaries, chapter titles, section titles, blocks of text, and copy. The entire guide can be skimmed exclusively in terms of red emphasis, and this approach is encouraged for readers with a strong foundation in media literacy. Red emphasis often points to issues that are beyond the guide itself, that should be researched independently.

GREEN EMPHASIS indicates content that addresses specific examples that illustrate or expand upon ideas in the text. For readers with limited systematic exposure to media literacy or theory, green emphasis indicates a "gentle introduction." Where appropriate, the relevant A&C Core standard is indicated.

BLUE EMPHASIS indicates thought, discussion, writing, research, and production exercises. Such sections encourage the reader to elaborate on the main content of the text.

Chapter 1 Communication, Space, and Energy

GOALS

1 | Understand the highly layered, simultaneous nature of contemporary communication.

2 | Understand some generalizations about how messages interact with their receivers.

3 | Understand the different spaces that communication takes place in: mental, physical, social and communication.

4 | Understand the limits of space and constraints on communication.

5 | Understand the role that time, duration and intensity play in sending, distributing and receiving messages.

6 | Understand how the different communications spaces are integrated through the Communications Loop.

ADDRESSES A&C CORE STANDARDS:

ACO 1.2, ACO 1.3, ACO 3.1, ACO 3.3, ACO 5.1

Communication, Space, and Energy

1.0.0 Introduction

Creativity Academies believes:

1 | The professional communication arts are far more competitive than most people discuss, especially in Hawai'i where the creative industry is tightly constrained and generally conservative.

2 | Recognizing this competitive reality–even if only to pursue a career on the mainland–should, under proper guidance, cultivate a sensitivity to excellence that is not derived from the mastery of the tool but from the context that mastery is expressed in.

3 | The CA approach to communication arts is aimed at teaching the context of mastery without requiring students to sacrifice their identities–this is why there is such a strong philosophical streak in the curriculum.

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Consider how much goes into the production of a typical two-page jeans advertisement in a fashion magazine. The result is a multi-layered product (see Figure 1) that combines the efforts of photographers, models, clothing designers, tailors, manufacturers, lawyers, lighting specialists, printers, distributors, agents, editors, factories, and cars. Each of these "ingredients" in this intentionally-limited list is like an invisible dimension of the advertisement. All of that work and effort gets flattened into a "simple" image–one among millions viewed daily–that is expected to create interest in and desire for the product. How? **By producing a reaction in the viewer, by getting him or her to invest attention in the image**.

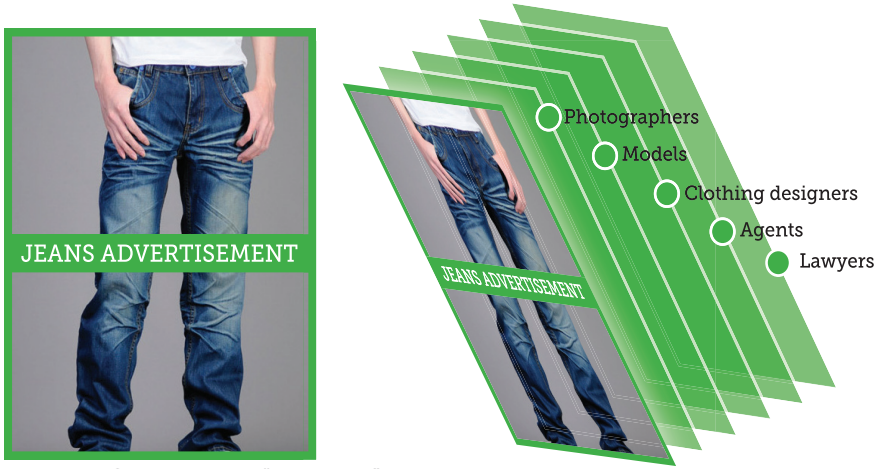

Figure 1: Seeing the ad "sideways."
Image source: Wikimedia Commons

The total system of the communication arts works because it produce returns on the energy invested its messages. People really do buy cereal, cars, music and perfume based on the ads they see. It is strange to consider what might happen if people stopped paying attention to advertisements. If each ad requires a little bit of mental and emotional energy to consume, remember and pass on to others, what kind of individuals would we be if we didn't? How have people been influenced and defined by those whose job it is to influence and define them?

These are complex questions that border on the philosophical. Because philosophical questions aren't particularly popular in our society, the issues they point to are typically measured in or considered in economic terms. The value, meaning, and impact of communication is reduced to budgets for production, distribution and consumption. But the dollar, though popular and accessible as a concept, is of little value in a pedagogic context. *So what* if Proctor and Gamble

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spent $2,252,700,000 on advertising in 2010? *So what* if a single, four-color full-page ad in Vogue Magazine costs almost $160,000?

In communication theorist Claude Shannon's terms, such statistics are "low information" messages, because people already know that companies spend huge sums on advertising... And they don't care, because their attention is focused entirely on the messages those sums pay for. When a student imagines herself leveraging technical and artistic talent to becoming a specialist in the communication arts, the motivation is to get a piece of those budgets, not out of any genuine desire to advertise toothpaste, panty hose, motor oil, or luxury resorts.

Beyond the promise of a salary, the only way to make the budgets associated with communication arts meaningful is to begin investigating exactly how this money was spent–not only from the perspective of the person balancing the books or cutting payroll checks, but from that of the message's designer/producer and that of the its consumer. Looking only at profit margins or the aesthetic attributes of the end result is like studying only the back or the front of an object; it is an effort carried out in two dimensions only.

If we "rotate" the object to reveal its depth (Figure 1), exposing the stack of layers that add up to its existence, we begin to "see things sideways." Generally speaking this is what critics and theorists of media and communications do. From Roland Barthes, who began investigating what he called the "mythologies" behind everyday commercial communications, to Jean Kilbourne, who systematically studied the patterns of representation of women in fashion magazines, and Sut Jhally, who intentionally takes the messages of advertising literally to reveal the superstitious, selfish, unrealistic and dangerously short-term thinking they encourage.

For the student approaching the core of communication arts in the 21st century, it is clear that the requirements for professionals success go far beyond mastery of technical and aesthetic details. Today, everyone is a media theorist, critic and a media producer (look no further than YouTube or Facebook for indications); the communications landscapes we traverse are entirely focused on us, customized for us, and ostensibly at our service as individuals and citizens. We are the center and the subject of communication, and also–through the choices we make–active communicators as well. Every student has the capacity to "unpack" contemporary communications issues and understand how much energy is invested in the systems of its production, distribution and consumption.

Teaching to and taking advantage of this capacity this goes beyond production tools or rubrics for design strategies. Understanding and participating effectively in the modern communications environment–particularly here in Hawai'i–demands a deeper engagement.

Creativity Academies believes that all students can develop personalized means of understanding how much energy they invest in the communications landscape they occupy. As it relates to the communication arts core standards, CA's hybrid approach of blending the rigors of both STEM and Art is less explicitly about incorporating scientific content than it is about applying scientific thinking. Because so much of communications theory can be considered scientific in nature, the experience gained with the CA approach can also prepare students to think scientifically in other disciplines.

Communication, Space, and Energy

1.0.0 Introduction

PRODUCTION EXERCISE
"CA Axioms of Energy"
1.0.0 Communication, Space and Energy

Prezi, Image search
ACO 5.0

1 | Explore the CA "Axioms of Energy" and illustrate the answer to the exercises via a Prezi presentation.

2 | Understand how the fundamentals of thermodynamics underpins everything else that humans do or dream.

DOWNLOAD: creativityacademies.com/1.0.0-01.pdf

Energy is a universal concept that all students can relate to because they all have it, lack it, save it and invest it. All students know the feeling of spending money on a movie and then being disappointed by it–calling the experience a waste of energy is not an exaggeration or a metaphor. The effort expended to get the money, organize the outing, get to the theater and watch the film all involve concrete amounts of energy that could be measured in calories, gasoline burnt, electricity used, and the more subtle energies of being emotionally engaged and stimulated by images, sounds, and stories.

PRODUCTION EXERCISE
"Measure a Day of Attention"
1.0.0 Communication, Space and Energy

Paper and Pencil
ACO 1.2, 1.3, 2.1, 2.2, 2.3, 3.2

1 | Map, quantify and analyze the amount of energy one dedicates to consuming, producing and distributing messages over an 8 hour period of the day.

2 | Understand how Professional Communicators carry out such demographic research in order to better work with the target audiences of their messages.

DOWNLOAD: creativityacademies.com/1.0.0-02.pdf

The human mind-body system is the crossroads for all of these energies. It is the source, repository, and destination of all communication, and most commercial messages address clothing, decorating, deodorizing, feeding, healing, amusing and transforming the body. And yet, not all bodies or messages are alike. Not everyone responds to the same message in the same way, usually because not every message relates to every body. The energy of communication interacting with the body's senses is analogous to the ways that we understand a body's interaction with heat, sound or light.

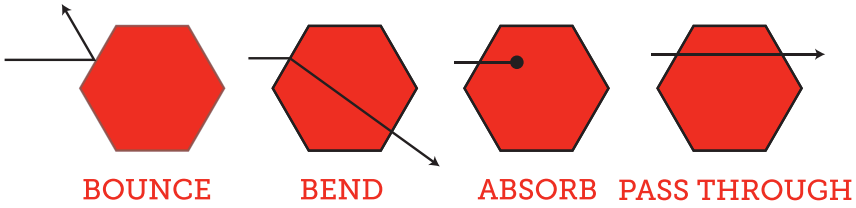
Communication, Space, and Energy

1.1.0 Communication, Bodies, And Energy

1.1.0 Communication, Bodies, And Energy

When energy interacts with a body, it can do so in one of the following ways. We refer to them as the factors of immersion. See *Chapter 4: Critical Visualization Concepts* for a detailed discussion of the analogy between the factors of immersion and light, especially *Section 4.1.2*.

1) Bouncing (reflection)
2) Bending (refraction, processing)
3) Absorption (storage)
4) Pass-through (transparency)



We can model the basic experience of communication with the four categories above. In this communications model, if the receiver actively resists, reproduces or passes on a message, we can say it was **reflected**. For example, the managers of online comment sections and forums attempt to harness the reflective properties of communication, hoping that high numbers of contributions also translate into reactions to advertisements.

If the receiver doesn't entirely understand, re- or misinterprets a message, we can say it was **refracted**, or "bent away" from its intent. Much of viral marketing (a strategy where consumers are encouraged to pass on commercial messages in their own communities without direct supervision of a Professional Communicator) is dependent on refraction.

A message that has been fully comprehended or made a part of the receiver is **absorbed** or stored. On the other hand, some messages go ignored, aren't received, or simply aren't intended for certain receivers. In such cases the messages "pass through," and the body is said to be **transparent** to the message.

There was a time in the early days of mass communication where all efforts were directed towards pursuing guaranteed absorption of messages in the hope that the receiver would be moved to action. Today, with so many messages dominating each individual's customized communications landscape, Professional Communicators must accept that reflection, refraction and transparency are a part of the game. The Professional Communicator studies and strategically plans for all four types of interactions, and is aided by increasingly powerful tools for not only tracking the distribution of a message but the reactions of those who receive it.

EXERCISE 1.0:

Consider the following questions and discuss your answers, making sure to use the concepts and vocabulary of the factors of immersion: absorption, refraction, reflection and transparency.

1 | Using the factors of absorption and transparency, discuss why people can assert that some images are "better" than others?

2 | Describe and discuss how differences in content are reflected by the factors of immersion. Provide students with several engaging, powerful, and artfully composed images of varying content. Are all three images subject to the immersion factors in the same way?

Communication, Space, and Energy

1.2.0 Time: Repetition, Duration And Intensity

3 | Discuss the possible effects of being repeatedly exposed to images of the same type (for example cute, violent, technical) for varying lengths of time.

4 | Discuss how one's resistance to a communications message can increase or decrease. What are the disadvantages of high levels of resistance? What are the benefits?

5 | Discuss why it is enjoyable to absorb images that we know are not real while actual images that challenge our beliefs get reflected?

6 | Explore the old saying "beauty is only skin deep" in terms of energy, bodies, and the various factors of immersion.

7 | Explore the old saying "a picture is worth a thousand words" in terms of energy, bodies, and the various factors of immersion.

1.2.0 Time: Repetition, Duration And Intensity

Though Professional Communicators wish they could deliver a message once and benefit from its full absorption, in practice the field is based around three main variables: repetition, duration and intensity.

Repetition refers to how often a message is delivered, duration to how long it takes to be delivered (independent of whether it is understood or reacted to), and intensity to the aesthetic and informational impact the message has on the receiver. Each aspect of this dynamic relationship involves the investment and transformation of energy.

Ultimately the impact of a message depends on its content (*see Chapter 5; The Communications Landscape, section 5.7 for detailed discussion of content types)*, but in the context of commercial communication the interplay of repetition, duration and intensity has become so sophisticated and competitive that content is secondary. This is easily demonstrated by looking at spaces that are dominated by advertising such as Times Square in New York (http://goo.gl/ZLHBy) and the Akihabara district of Tokyo (http://goo.gl/je83s). In communications-rich environments such as these, flashing, animated signs driven by different rhythms of repetition create a level of meaning that is entirely separate from the content of any individual ad. Considered in terms of electrical, mechanical, and creative energy (to sample three types) these spaces are incredibly intense. The impact on people that move through them is real on emotional, physical and mental levels.

Times Square and Akihabara vividly demonstrate the fact that no sender is ever alone in a communications landscape; there are always other messages vying for the same limited pool of attention in a population of receivers. Professional Communicators call the totality of competing messages "clutter," and they have evolved various design strategies to cope with it. Whether considering the repetition of television commercials in a block of programming, the same ad appearing in different magazines, the visual loop of an electronic sign or web banner, or the mass printing of posters and flyers, it is clear that delivering a message once is rarely enough.

All such strategies are based on how often and how long a receiver interacts with a message, and the emotional intensity with which it is delivered. Gone are the days where basic brand recognition or the physical scale of a message could guarantee reception. Today, the managers of brands with deep and long-established emotional attachments such as Coca Cola, Apple and Cheerios are loyal to those professional communications firms that helped them establish their position. It is a huge deal when a major company switches its public relations or ad firm, even when consumers expect consistently innovative communications strategies. And yet companies with estab-

Communication, Space, and Energy

1.2.0 Time: Repetition, Duration and Intensity

lished brands are reluctant to risk alienating their dedicated consumers by adopting or appropriating a high-risk strategy.

EXERCISE 1.1:

1 | Discuss the advertising strategies of two different and highly successful brands from different markets, such as soda and athletic wear. Paying particular attention to differences in intensity, discuss how perception of these brands would change if their advertising strategies were switched.

Each strategy takes constraints on energy and resources into account. In a simplified case, it takes some amount of energy to go through the entire process of design-to-deployment for a single large billboard, and a different amount to produce a thousand 11x17 posters. Similarly, it takes different amounts of energy to create a short radio advertisement that will be repeated 150 times over the course of the day, and a longer infomercial that might only play once a week.

It also takes energy for the receiver/consumer to adjust (and adjust to) the information density of these respective channels. Imagine trying to read 300 descriptive words on a billboard, or attempting to make sense of a poster that features nothing more than a beautiful photograph. See *Chapter 3: Mediation*, sections 3.0-3.5, and *Chapter 4: The Communications Landscape*, section 4.4 for a deeper discussion of the receiver's end of the relationship.

EXAMPLE 1.0:

Periodic repetition is expected to establish awareness of the message over time, while messages of greater duration have time to deliver greater detail and make use of various established storytelling techniques.

However, commercial communications channels must be paid for, and professionals always have to weigh the costs of production and distribution against what they hope the audience will actually react to and follow through on. Again, we see that this is a matter of investing energy in production, distribution and consumption.

Consider the communications channel of network television which is funded by advertising and structured by the times that different shows are broadcast. Commercials are shown based on demographic research, and keyed to the audience that a show attracts.

In this communications space we can find low repetition but higher duration commercials such as those shown only during the Superbowl (a guaranteed audience), and we can find high repetition but low duration commercials that are repeated throughout the year or seasonally. The professionals who produce these different types of commercials do so only after economic calculations and extensive demographic research.

EXERCISE 1.2:

Consider each of the following exercises first from the perspective of the client who is sending the message and then from that of the consumer who is receiving it.

1 | Discuss the expected positive results and unanticipated negative results of repeating a television advertisement several times over the course of a day.

Continues...

Communication, Space, and Energy

1.3.0 Constraints on Communication

2 | Discuss the advantages of a 30-minute "infomercial" compared to a 30-second commercial.

3 | Discuss the unique challenges of making a full-length movie in order to promote a single product.

4 | Discuss the advantages and challenges of delivering a message on multiple channels (for example radio, television, magazines and billboards) in terms of repetition, duration and the factors of immersion.

Identify and describe television advertisements that represent the following combinations of repetition and duration. What assumptions are made about the audience in each of these examples?

5 | Low repetition, high duration.

6 | Low repetition, low duration.

7 | High repetition, high duration

8 | High repetition, low duration.

1.3.0 Constraints On Communication

Though repetition and duration represent two of the approaches to delivering messages in the contemporary communications environment, there are several fundamental issues that determine how such factors actually manifest.

CONSTRAINT 1 | The contemporary communications environment offers more opportunities for anyone to become a sender than any other in history: everyone is a potential communicator.

CONSTRAINT 2 | Commercial environments such as malls and movie theaters are almost 100% saturated with competing communications messages, guaranteeing that everyone is a potential receiver. However, no sender can reach all receivers.

CONSTRAINT 3 | Though anyone can become a sender, and everyone is a receiver, the actual capacity to be either at any point in time is constrained by the amount of attention that can be directed or diverted.

CONSTRAINT 4 | Attention is the renewable resource that powers the modern communications environment. All potential receivers have a reserve of attention and all senders are competing for it. Few receivers are able (or willing) to invest all of their attention in a single message without having been convinced that it is worth it at an earlier date. All Professional Communicators negotiate this chicken and egg scenario. This is also why repetition and duration are key variables in commercial communications.

Receivers divide their attention among hundreds of messages spread across dozens of channels, and senders are skeptical as to how frequently their messages are actually absorbed. The result is a heterogeneous environment of communication that is dependent on defining, creating and tracking audiences in order to be successful. This fact should not be ignored–one cannot teach communication arts without also presenting the ultimate context in which they are deployed. To design something as straightforward as a CD cover or movie poster in a professional context is to enter into a relationship of surveillance, tracking, manipulation, simulation and modeling.

To practice the communication arts at a level of excellence that can support a career requires an exceptional degree of cultural and narrative sensitivity. Market surveillance more than recording an audience's actions and reactions (for example: likes, shares and comments), but also studying all of their habits: their slang, their cultural history, their ethnic idioms, their fashions, and educational levels.

Communication, Space, and Energy

1.4.0 Communication and Space: What Is Space?

Just as the jeans advertisement discussed earlier is initially understood as a single object that reveals multiple dimensions when it is "viewed sideways" by the critical producer, the typical consumer is similarly arranged. The Professional Communicator must also see receivers "sideways" to better understand how to target them.

Even though the platforms for receiving messages are increasingly standardized, be they websites, mobile applications or audiovisual streams, the definitions of the groups that use these platforms are in a state of constant dissolution and reformation. This is a particularly critical point to emphasize, because the typical student in the role of a consumer does not understand him- or herself to be changing even though their relationships to things like pop stars, fashion and music are constantly shifting.

The Professional Communicator understands this constant flux and has to deliver messages at different scales, rates, densities and levels of intensity. Such an effort not only requires a knowledge of contemporary networks and communication strategies, but a deep understanding of the aesthetics of the messages that are transmitted through them.

1.4.1 What is space?

Just as the immersive factors of reflection, refraction, absorption and transparency remind us that the body is a center of communication, we also emphasize the fact that this body must be located *somewhere*; Call it "space." Generally we think of space in terms of a "thing" that bodies occupy, whether it is a three-dimensional room or a two-dimensional page or screen.

We divide these spaces into units that give them meaning, ranging from measures of distance to qualities such as temperature and humidity. Spaces of all dimensions also have an emotional character that comes from their aesthetics (how they are decorated or designed), and from the social role that they play.

Spaces become more functional when there are two or more variables brought together in a relationship, especially when they are different.

EXAMPLE 1.1: Exploiting Demographics

Scientists, artists and Professional Communicators work with communication spaces like this all the time. Consider a hypothetical population of human beings who are each described by three variables: age, weight and cholesterol level.

Looking at these data, a scientist or doctor might come to conclusions about lifespan. In response, a graphic designer might be contracted to develop a cholesterol-reduction ad campaign. At the same time, an artist might take the same information and express something deeply emotional about the quality of this population's life. All three groups relate to the space (a population) that is described by those three variables, and each will make use of it in different ways.

Professional Communicators use a wide range of media to create spaces that people react to. Websites, magazine layouts, business cards, advertisements, billboards and posters are all spaces. Some are two-dimensional pages or frames; others are three dimensional in the sense that they not only present information in a picture plane but also offer interactivity, or information connected with time.

Communication, Space, and Energy

1.4.2 Communication and Space: Kinds of Space, & Space As Communication

1.4.2 Kinds Of Space

We consider four different kinds of space:

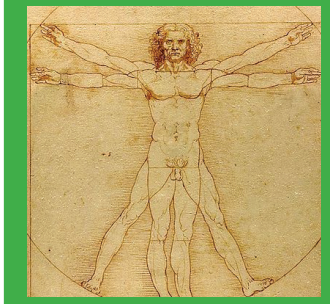
PHYSICAL SPACE: the realm of our immediate senses of touch, sight, smell, sound, mass, temperature and balance.

MENTAL SPACE: the realm of our emotions, dreams, plans, and ideas. Though based on the concrete existence of brains and nervous systems, we don't think of mental space as being solid or tangible.

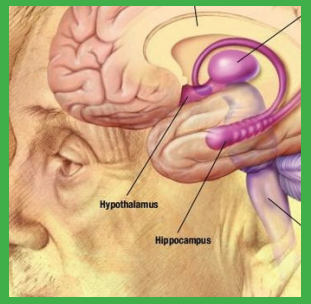
SOCIAL SPACE: the realm of mental and physical relationships between and among people and objects.

COMMUNICATION SPACE: the union of mental, physical and social space presented through specific channels such as photographs, videos, posters, music and fashion.

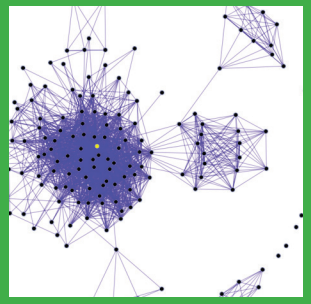
Professional Communicators are concerned specifically with this last kind of space, as their job is to move people to action or at least generate reactions based on manipulation and stimulation of emotions and relationships.



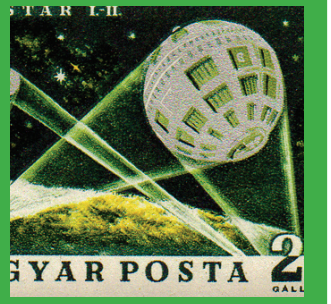
PHYSICAL SPACE



MENTAL SPACE



SOCIAL SPACE



COMMUNICATIONS SPACE

1.4.3 Space As Communication

Imagine communication as the "stuff" that makes space "work," that makes it productive.

Consider an empty white room with perfectly smooth walls and even lighting. What happens when you start putting furniture into the room? The function of the room starts to become apparent. Bar stools, pews and folding chairs will each contribute different messages to the room's meaning and purpose. Those who enter a space prepared to do one thing may reconsider their actions once they see how it is furnished. When things like the paint on the walls, or the type of lighting, or actual signs that indicate what should or shouldn't be done get added to the mix, what was once a white cube becomes a kind of machine. This machine doesn't just operate in physical space, but also in mental, social and communication spaces.

Things like furniture, wallpaper, lights and signs communicate the space's function and have their analogies in language and

Communication, Space, and Energy

1.4.4 Communication and Space: Space As Communication & Limits of Space

ideas (mental space), indicators of status or relationship (social space), and the types of media that occupy a communications space: magazines on a rack, music playing over speakers, or clothes folded on shelves, for example.

Clearly the four spaces (physical, mental, social and communication) are embedded in each other and intertwined. When we feel excited in an amusement park, reverent in a church, or melancholy in a cemetery, it is because all of the themes, ideas, objects and signs in these spaces are communicating something to us. However, no matter how complex these relationships get, there are always limits to the ways they interact.

PRODUCTION EXERCISE
"Space and Gestalt Theory"
1.4.0 Communication, Space and Energy

Paper and pencil
ACO 1.0, 3.0

1 | Understand how the CA conception of physical, social, communication and mental space relate to Gestalt theory in graphic design.

2 | Understand the CA strategy of understanding the ways in which communication fundamentally underpins contemporary culture.

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1.4.4 Limits Of Space

Space is always a limited resource. A Professional Communicator's client always wants to say more than a message can express. Sometimes a client wants to deploy a message in a specific space and doesn't know how to do so. The Professional Communicator's job is to understand how the target space works, and to maximize the efficiency of the message that will be deployed there.

LIMITS OF PHYSICAL SPACE

There is only so much room to work with in a room, or on a surface such as a wall, page or screen. In the end, the symbols, objects, sounds, illustrations and text that convey a message must "fit" the space.

Every physical space is constrained by its function and its volume or area.

EXERCISES 1.3:

1 | Discuss the functional limits, that is what can and cannot be successfully communicated in the following physical spaces: movie theaters, art galleries, grocery stores, bedrooms.

2 | Discuss the trade-offs between the relative size and density of text and image in a typical flat rectangular space of any given size. How does an emphasis on text or image change the feeling or function of a message?

Communication, Space, and Energy

1.4.4 Communication and Space: Limits of Space

LIMITS OF MENTAL SPACE

There is only so much content a receiver can take in and process at once; A message may not resonate with consumers because they are unfamiliar with its content or are opposed to it. Also, the effect of "clutter" (overwhelming numbers of competing messages) puts a strain on mental space whether in the context of production, distribution or consumption.

Despite the impression that the contemporary communications landscape is defined by multitasking, in reality most people can only effectively do one thing at a time. Most commercial messages are delivered in such a way that attention is drawn *away* from all of the other possible distractions.

EXERCISES 1.4:

1 | Identify and discuss an example of communication that pushes the limits of your mental space. Try to identify the factor(s) that push it "over the edge."

2 | Explore how color and typeface choice used in a city's official signage is intended to cut through the clutter of competing messages.

3 | Why can the sight of a police officer's uniform or the flashing of blue lights make someone apprehensive? Why can the same signals produce feelings of relief or comfort?

LIMITS OF COMMUNICATION SPACE

Consumers enjoy being challenged by new images and by creative uses of language, imagery, sound (and now gesture, voice recognition, and touch) but they don't enjoy feeling stupid, ignorant or out of touch. This is where issues of language and visual literacy come into play.

Communication is still restricted to channels that correspond to human senses and traditions. Therefore, communication spaces are ultimately "scaled" to accommodate people. However, communications infrastructure–consider a search engine, a cellular network, or a publishing house–are the *hidden* aspects of the respective communications spaces they produce and they operate at a vastly superhuman scales. The reality of infrastructure isn't restricted to technology, as concepts like language acquisition and cultural context are what make the rich communication spaces of make high school dances, church services and picket lines possible.

EXERCISES 1.5:

1 | Identify and discuss an example of commercial communication that assumes that the audience that consumes it is not very smart, discerning or critical.

2 | Identify and discuss an example of commercial communication that "gives the consumer credit." Discuss the differences.

3 | Discuss how the space of the printed page is different from the space of the digital display (screen). Though the screen has many of the same elements as the printed page (images, text and charts) it can display these elements over time as animation or video. It an also

Communication, Space, and Energy

1.4.4 Communication and Space: Limits of Space

display interactive elements that allow control over how the screen's elements are presented (showing and hiding elements, starting and stopping time-based media such as video or sound).

LIMITS OF SOCIAL SPACE

Communicating to a large number of people always requires that the message be reduced toward a least common denominator. When this restriction is combined with the fact that most commercial communication is addressing wants instead of needs, the limits to understanding people and their relationships becomes apparent.

Though the power of surveillance that platforms like Facebook and Twitter offer alters the constraints of social space, interpersonal and institutional relationships remain complex. Commercial efforts to standardize consumption tend to produce less diversity in communication, a situation that runs counter to the multiplication of options that contemporary digital communications makes possible.

But how does space get structured? How is it understood?

EXERCISES 1.6:

The question of what social space "is" is tied up in the mind itself. We can see, smell and hear people at a distance, creating the basic channels of space that are related to our senses. We can of course touch people physically; and we can literally and figuratively move them emotionally. This way of thinking invests in boundaries or distinctions between people and also acknowledges that these boundaries can be crossed. Consider the following questions:

1 | Do you believe that there are actual boundaries between people? If so, what are these boundaries "made of" and how are they maintained? If not, how do you explain the belief that people have in the distinctions between them?

2 | Though you certainly could carry out a sophisticated chemistry experiment in a room with a large comfortable-looking bed, two lamps and red walls, you probably wouldn't. Why not? Similarly, discuss in detail why a chemistry lab isn't typically considered romantic.

3 | Certainly spaces made by people communicate their meanings to those who occupy them, but what about nature? Why do you think that natural spaces can inspire feelings of joy, reluctance, depression or outright fear? How do Professional Communicators use our deep and ancient reactions to nature to craft their messages?

EXAMPLE 1.2:

Consider how a Professional Communicator goes about designing a trailer for a movie and how a member of the audience experiences the showing of that trailer. The Professional Communicator's goal is to generate excitement in an audience that watches the trailer. This is a manipulation of mental space. After viewing, the audience members might describe the theater as being "filled with excitement," or "charged with anticipation," and doing so would not be a metaphor. Why?

Because: 1) anticipation and excitement can be quantified by something as simple as a survey or listening closely to the noise level in the room; and 2) a different edit of the trailer (a change of the communication space) can produce different reactions in the audience.

Though intangible, excitement and anticipation are measurable variables of physical space. Further, a packed movie theater is a

Communication, Space, and Energy

1.5.0 The Communications Loop

complex arrangement of social space that can be broken down at the following scales:

• Each audience member constitutes a unique social space.

• Groups of attendees, linked to each other by friendship, family or romance, create local social spaces.

• Groups of attendees are strangers to each other. A large group of people coming together to follow an audiovisual narrative in a darkened room creates a social space unlike any other.

Movie studios take all of these factors and more into account when marketing their films, and they spend millions of dollars per year on advertising and research. Professional Communicators are expected to be acutely aware of this multiplicity and deliver reliable if not predictable results.

This is a tremendous amount of energy (from the electricity that powers printing presses to exhausting design meetings and review sessions), circulating through a complex network of spaces. All of this work is focused on the trailers we watch, the brochures we read, the commercials between our favorite shows, and increasingly the world-of-mouth spread of messages through our social networks.

We are then expected to give our own energy to the system by not only paying attention to commercial messages, but also paying money for the products they promote. And how do we get money? By working: expending our personal energy in exchange for compensation.

Professional Communicators are expected to understand how a given project relates to this totality of physical, mental, social and communications spaces because decisions made in one area can have an impact on the others. This could be something as simple as translating copy from one language to another, recognizing that the meaning of a color in one culture might be incompatible in another, or being aware of an audience's relationship with issues such as labor practices and environmental impacts.

1.5.0 The Communications Loop

Though the system of modern communication arts is vast and complicated, it can be reduced to a simpler set of steps:

1| Messages start in the mental space of the Professional Communicator, born in the relationship between him or her and the client that wants the message delivered.

2| Messages are "embodied" in a communications space (a "channel") such as print, video or fashion. Because the perspectives of the sender and receiver of a message differ, so do their respective communications spaces. Example: directing or editing a music video is very different from watching or critiquing it.

3| Messages must pass through physical and social space, where their meaning is subject to a wide variety of interpretations.

4| Messages end in the mental space of a receiver who may or may not be the intended target.

5| The sender and the receiver are connected by a feedback loop, especially in the context of commercial communication where a successfully delivered message is expected to transcend it. The receiver who enjoys the commercial for the new flavor of potato chip is expected to buy the product, which satisfies the client who commissioned the message in the first place and then funds subsequent rounds of communication.

6| The time taken to generate, transmit, and process a message varies continuously, thereby introducing uncertainty into the loop.

Communication, Space, and Energy

1.5.0 The Communications Loop

Though there is a step-by-step linearity to the communications loop that tracks a message's progress from sender to receiver, it is also useful to imagine a continuous circulation of energy instead of a clockwork mechanism.

The following figure illustrates one of many communications models that Creativity Academies uses of to explore the communication arts. Like all models it emphasizes certain aspects of reality and discards others in the interest of making certain features easier to apprehend. In this case the emphasis is on the flow of communication and its energy though the four spaces.

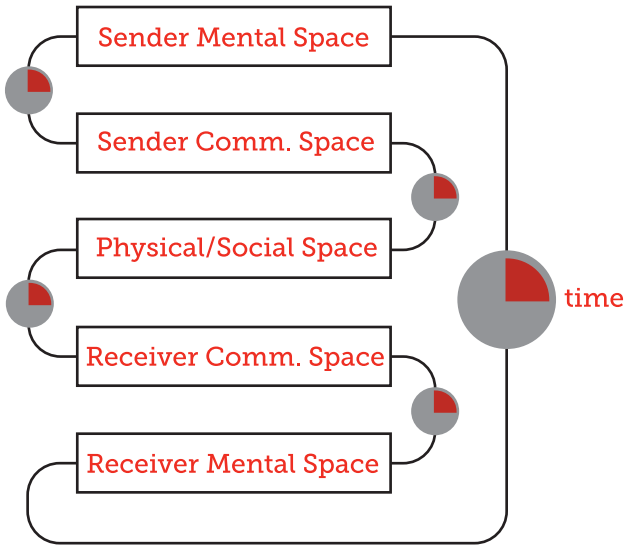


Figure 2: The Communications Loop

Every message circulates through this cycle, and the majority of one's time is spent at one stage or another within it. The communication arts, from the vantage point of both the sender and the receiver, are the means by which passive consumption becomes awareness, then criticism, and finally response.

What follows is the analytic breakdown of the various blocks of the sender-to-receiver loop. Each block is an aggregate of hard data, individual experience, conscious design, and intuition; call them "quantitative poems."

1.5.1 Quantitative Poems

These quantitative poems are meant to be evoke the kind of intuitive analysis frequently employed in the professional communications field. When a client is determining whether they will work with a particular designer (or vice versa), there may not be a spreadsheet and a formula in front of them, but there are variables, such as years of experience, number of projects that meet a certain criteria, size of staff, quality of references, and even metacritic scores, that are intuitively weighed against things like creative, budget and time constraints.

SENDER MENTAL SPACE does not exist in a traditional physical sense. However, all creatives, designers and producers are aware of the "realm of possibilities" that exists when a communications problem is first tackled. The concept of mental space represents this realm. A sender/producer's mental space is defined by a relationship between goals and constraints:

GOALS are clear statement of what is to be accomplished by the act of communication. The goal is a simple word-based description: "Sell more soda this month," "promote this new sneaker," or "raise aware-

Communication, Space, and Energy

1.5.1 The Communications Loop: Quantitative Poems

ness of the need to recycle." The natural question is: "how?" and this is where creative thinking comes into the picture. Sometimes the answer comes from spontaneous insights, other times it is a matter of applying techniques earned over years of experience–both approaches embody creativity. An early feedback loop can emerge here, as creative thinking often changes the way that goals are understood; sometimes they change, more often than not they are refined.

CONSTRAINTS are the points where the Professional Communicator's reality meets the client's desires. This space includes such variables as *time*, *budget* and *expertise*.

For the fine artist, or the amateur or underground producer who has complete freedom to craft messages, sender mental space is vast. He or she sets the goals and has a good deal of control over the constraints. For the Professional Communicator however, sender mental space is always smaller than it could be and is structured in a collaboration with the client.

Once goals and constraints are established and understood, the work of creating the message begins. However, one should recognize how much effort it takes to get to this point, and also consider how *previous production experiences* (invested energy) contributes to how challenging this first stage of communication really is. One of the most important factors that a Professional Communicator can bring to a client relationship is an honest knowledge of his or her own capacities.

With the mental space of the producer defined, energy is invested in crafting the means by which the message ("buy this shoe," "save this stream," "quench your thirst") is actually delivered. What is traditionally understood as "the real work" of design begins in SENDER COMMUNICATION SPACE. Will it be a video? A web page? A video game? A full page spread in a magazine? Once a channel (or channels) have been chosen, questions of aesthetics are addressed, and these are based on how the audience is defined, the desired reaction, and models of expected results.

RESEARCH is the *conscious search* for more facts about a situation, the deep exploration of relationships, and the organization of the results. Professional Communicators cannot craft effective messages without doing research.

DESIGN EFFORT is the actual work of *applying skills* and experience to meet the goals within the constraints of a project.

A CHANNEL is the vehicle that the message will use to reach the receiver and the means by which that message will exist in physical space.

The message that is produced/sent has to exist somewhere to be consumed/received. PHYSICAL SPACE is the "container" for COMMUNICATION SPACE and SOCIAL SPACE. This block represents the physical space where the sender's message is actually delivered and received, not where the message was produced. Physical space is organized and used according to the rules and conventions social space.

In physical and social spaces the sender has little control over the receiver. There is no way to truly guarantee the outcome of an encounter between a receiver and a message borne by a billboard or a gas

Communication, Space, and Energy

1.5.1 The Communications Loop: Quantitative Poems

pump's video screen. Even if the receiver's full attention is considered a given, there is no way to predict how much time will be spent with the message, or whether it will be interpreted correctly if at all.

Receiver Comm. Space

ATTENTION is the *currency or natural resource* of communication space, the "stuff" that the receiver invests in the message. Attention has nothing to do with agreement, disagreement or opinion.

INTERPRETIVE EFFORT is the work the receiver does (after their attention has been "grabbed") to judge, decode, assess or otherwise *make sense* of the message. Interpretive effort is a product of attention.

The receiver engages or is engaged by the CHANNEL, and everything invested in the message by the sender is put to the test as it enters the receiver's mental space. Here the factors of immersion come into play.

Receiver Mental Space

RECEIVER MENTAL SPACE is just as abstract as that of the sender. Most consumers of communication do not take the means of production into consideration and operate with a different pair of variables.

REACTIONS are the mental and or physical movements toward or away from, into our out of alignment with, the message sent by the Professional Communicator.

INTERPRETATIONS are the *ideas* created in the mental space of the receiver that *may or may not match up with the intended goals* of the message.

EXERCISE 1.7: Using the Flowchart

1 | The following tables can be used to help model the communications loop and analyze the way that a message is *distributed* throughout its various nodes as an active process. In this exercise the point of view is that of the sender/producer of the message, and is therefore defined by client expectations, not audience measurements. These tables are designed to help the student systematically list, compare and describe the entire scope of solving a communications problem.

SENDER MENTAL SPACE:

GOALS	CONSTRAINTS
Description of each of the message's goal(s).	Corresponding description(s) of each goal's constraints.
Description of skills required to reach the goal(s) and any special means that the producer has to address constraints. The idea is to balance what the producer's knowledge, experience and resources with the client's demands.	

Communication, Space, and Energy

1.5.2 The Communications Loop: Graphing Quantitative Poems

SENDER COMMUNICATION SPACE:

RESEARCH	DESIGN EFFORT
Amount expended, in hours, # of people, amount of information generated, etc.	Description of techniques applied and solutions reached to craft the message.
Narrative description of the overall strategic, organizational, and design effort required to achieve the goals of the message. Includes specific aesthetic and technical details of the channel(s) to be used for the message.	

PHYSICAL AND SOCIAL SPACE:

PHYSICAL	SOCIAL
Description of physical environment message is expected to be consumed and or delivered in.	Description of social relationships the message depends upon, and those it is intended to generate.

RECEIVER COMMUNICATION SPACE:

ATTENTION	INTERPRETIVE EFFORT
Description of what aspects of the message are designed to get attention.	Description of conclusion(s) the receiver is expected to reach.

RECEIVER MENTAL SPACE:

REACTIONS	INTERPRETATIONS
Description of what reactions the message is expected or designed to trigger in the receiver.	Description of conclusions the receiver is expected to come to.
Narrative description of the overall impact the message is intended to have on the receiver, including actions that the sender expects the receiver to take after consuming it. Time factors should not be left out.	

1.5.2 Graphing Quantitative Poems

The graphs that follow serve to illustrate each of the blocks in the communications loop. Where the previous section provided descriptions of the variables and relationships involved, this one visualizes the crucial factor of time.

Each graph attempts to express the relative changes that each block's variables go through over time. The curves shown are generalized examples, not concrete representations, for there are no objective or universal units to measure or quantify variables such as "skill" and "constraints."

However, experienced communicators know that high levels of skill tend to reduce the impact of constraints.

Even the period of time being represented is only defined in terms of an abstract beginning and an end, for the engagement with a given block's message, or completion of its goal, could take minutes or months depending on the circumstance.

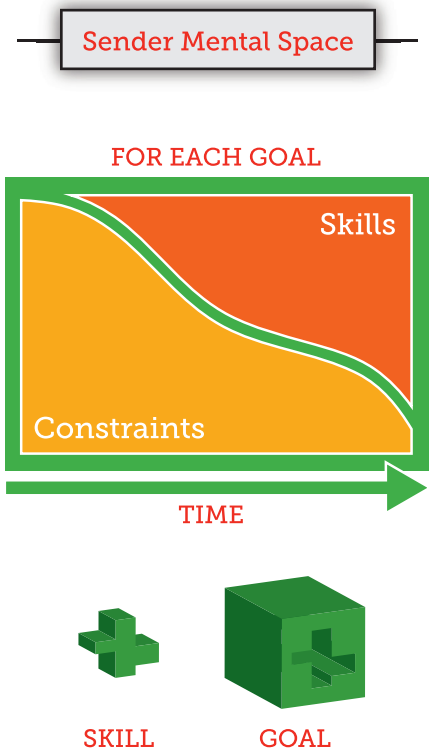
Students should be able to read these graphs and then visualize scenarios where the curves would look different.

Communication, Space, and Energy

1.5.2 The Communications Loop: Graphing Quantitative Poems

For example, in the Constraints vs. Skills graph for sender mental space we see a gentle descending curve representing the diminished impact of constraints as skills increase over time. What would the curve look like if, at the beginning of the goal-reaching process, the sender's skills were at a high level? What would it look like if a goal's constraints and the sender's skills were evenly matched?

Again, the graphs do not represent specific skills or constraints, but are meant to function as quantitative poems (or "analytic evocations") that give the viewer the gist of possible relationships.



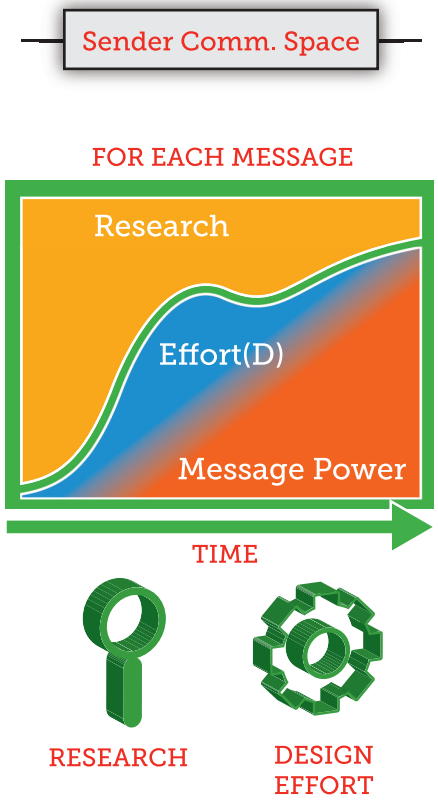
The goal of a message is like a hole in a puzzle, a skill is the piece that fits it, and constraints can be represented by the complexity of the missing piece.

It takes time to reach the goal of successfully defining a message, and in the sender's mental space this is a shifting relationship between deployable skills and presented constraints. The time period could be brief, matching the size of a print ad with the sender's Photoshop skills, or be a six-month process that includes working with the client to define the goal.

In a perfect client relationship the graph would be horizontal with a minimum of orange, representing a situation where the sender's skills exceed the constraints during the entire goal-defining process.

In real but positive situations however, the "dominance" of constraints is reduced not by increased skills (which are never gained in the goal-setting period) but a growing understanding of what skills the sender can bring to bear on them.

What would the graph look like in a real but negative situation?



This graph maps research against message power and includes a "zone" that represents the role that design effort plays in negotiating between the two variables. Powerful design requires effort and research.

Developing a message in the

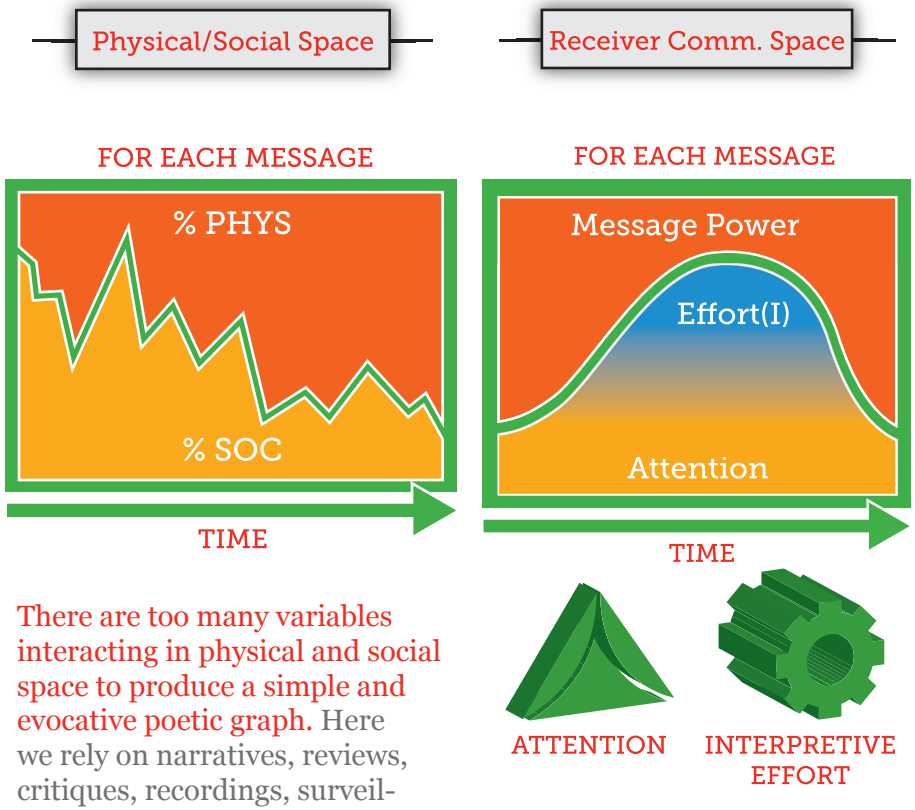
Communication, Space, and Energy

1.5.2 The Communications Loop: Graphing Quantitative Poems

sender's communication space requires time. As the production process unfolds, in an ideal positive situation the role of research diminishes as the message's power increases–assuming of course that the sender makes an effort.

It is easy to imagine graphs that visualize situations where too much time is spent on research, or not enough effort is expended to increase the message's power.

Naturally, if the sender had infinite time to craft the message, the curve might fluctuate indefinitely. But in the finite amount of time that a sender has to create a message it's power should be maximized thanks to the consistent application of design effort.



There are too many variables interacting in physical and social space to produce a simple and evocative poetic graph. Here we rely on narratives, reviews, critiques, recordings, surveillance records and other types of longer form media to understand how messages are deployed and consumed in physical and social spaces. We can, however, chart which "side" of a message is dominant at a given point in time.

The communication spaces of sender and receiver are inverses of each other. They are linked by the measure of a message's power which itself reads differently depending on which side of the message it is viewed from.

Where the sender expends design effort, the receiver applies interpretive effort. The complement or reciprocal of the sender's research is the receiver's attention.

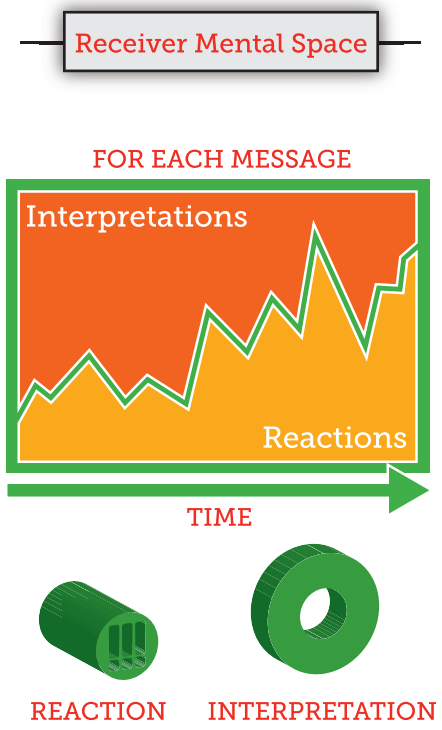
This graph evokes a typical receiver's reaction to a message. The message's power starts at a high level, decreases as the receiver converts attention into interpretive effort, and then increases again. The message's power increases again because no receiver can engage a message indefinitely, due to distraction, boredom or exhaustion.

Interpretation–going beyond what simply produces a reaction or gets attention–always reduces a message's power. What we understand as passive consumption is really a reduction or absence of interpretive effort.

What kind of engagement might a "flat" graph represent? What about a straight line between opposite corners?

Communication, Space, and Energy

1.5.2 The Communications Loop: Graphing Quantitative Poems; Conclusion



The mental space of the receiver is represented in terms of a constant interplay of interpretation and reaction, fluctuating like a map of the stock exchange. This graph makes no effort to specify reactions, because despite the best efforts in research and design effort, the most cohesive and attention-grabbing expressions of the message in communications space, the receiver's interpretations and reactions are unknowable until she or he is exposed to the message and given the means of responding or acting.

Despite this fundamental uncertainty, interpretation-reaction pairs *are* anticipated and designed. For example, the intentional use of a shocking image as a political motivator during a campaign. The critical question for senders and receivers is whether there exists a specific and consistent graph of interpretation versus reaction that represents the sender's desired outcome.

The real-time monitoring of receivers makes the quest for such graphs possible and the procedures exist at different scales of time, including: votes in an election, box office receipts, marketing focus groups, likes or shares on a web page, and "neuromarketing's" live brain scans.

1.6.0 Chapter Conclusion

Students exist in a hybrid communications landscape where "voices of authority" in politics, news, education, and entertainment coexist with a cultural drive to sample, remix, mash-up, deconstruct, satirize or outright dismiss the medium that bears their messages.

Like the Creativity Academies Curriculum Guide itself, the figure is not meant to be *followed* but actively *interpreted* and discussed. What ends up left out? What has been overlooked? What has been perhaps oversimplified? How can teachers leverage their primary advantage in the classroom: personal experience and historical context?

The figure on the following page shows how "seeing sideways" (as represented by the stack of layers that lurks behind every "finished" commercial message, such as the jeans advertisement in a magazine spread) integrates with the communications loop and the quantitative poem graphs.

The purpose of this unified illustration does not represent a dogmatic means of media analysis. It is not intended to represent a *rigid sequence*, but to invite contemplation of a *totality characterized by circulation.* Interpretation can begin anywhere in the loop, and move in either direction.

The figure seeks to express the multiple and simultaneous efforts, practices, failures, spaces, systems, and states of mind that come together to create, structure, and perpetuate even the most banal expressions of the communication arts.

Communication, Space, and Energy

1.6.0 Conclusion

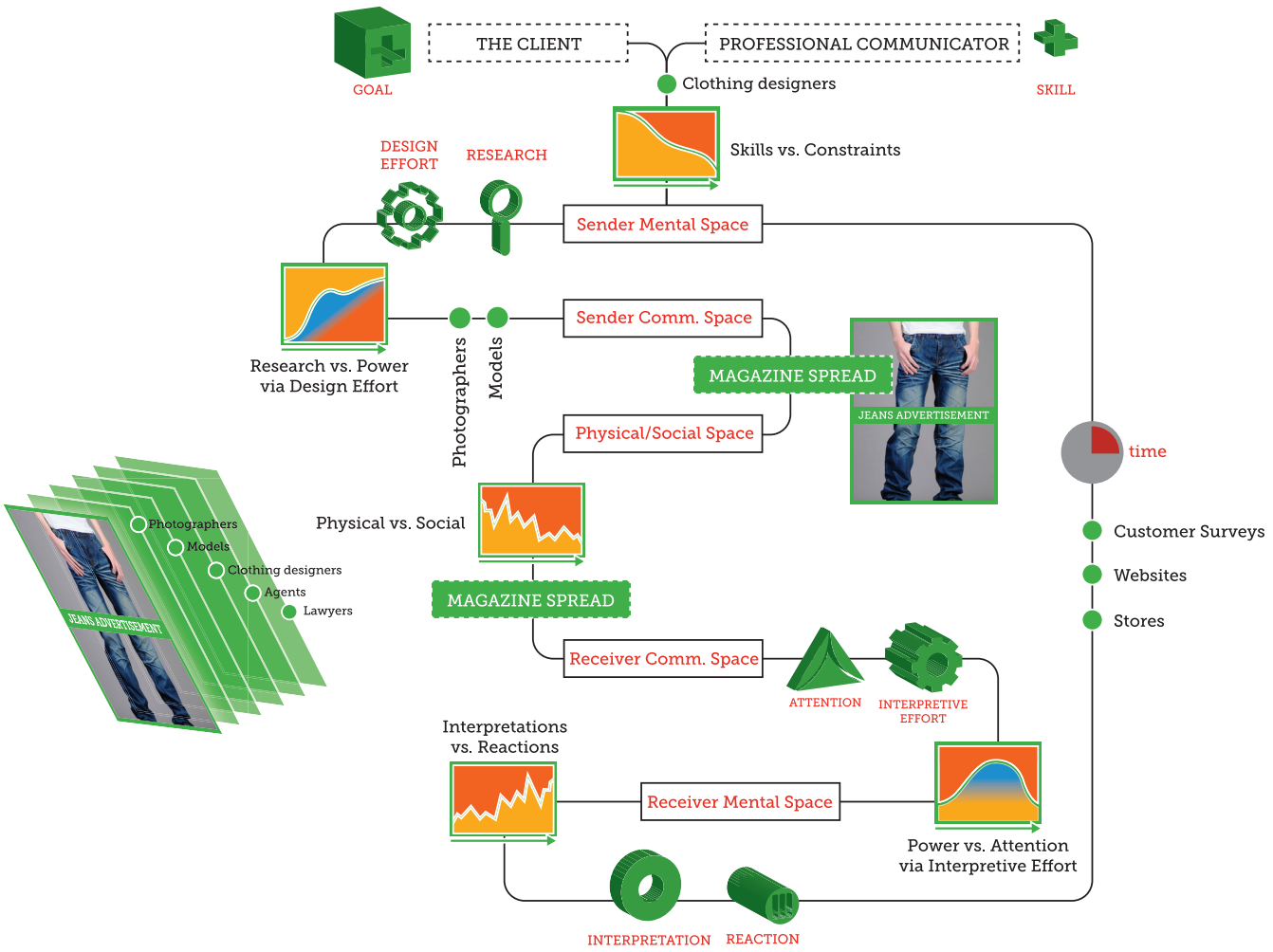
Here the blocks, routes, graphs and symbols of the communications loop are presented with elements from the hypothetical jeans advertisement "seen sideways." Note the external origin of the message in the meeting of client and communicator. Also note that the green bullets are samples of the stack, and not meant as an exhaustive list of the types of entities or relationships that exist in the network.

As you interpret this illustration, try to keep three things in mind:

1 | The green points that mark different points of engagement in the cycle are by no means exhaustive–there are dozens of other variables that appear between the various spaces of communication.

2 | Time, though symbolized at only one point on the right, plays a role at every single moment of the flow.

3 | Energy, though indirectly represented via the quantitative poem graphs, is a ubiquitous issue at all points in the loop.



Chapter 2
Art and Design

GOALS

1 | Understand that traditional historical models of art history and design are now just so much more information that is available online and in the real world.

2 | In light of | 1 |, recognize core expressions of human visual history that have been passed down through millennia and continue to inform the latest media humans create.

3 | Explore a compressed and abbreviated timeline of significant mo(ve)ments in art and design.

4| Understand the Creativity Academies conceptual definitions of art and design.

ADDRESSES A&C CORE STANDARDS:

ACO 1.1, ACO 1.2, ACO 1.3, ACO 2.2, ACO 3.1

Art And Design

2.0.0 Introduction

Once upon a time, artists and designers were expected to have a formal knowledge of art history in order to be taken seriously. In the "classical" educational models, a creative person was expected to build upon a rigorously defined tradition that drew a straight line from the temples, frescoes and statues of the ancient world, through the cathedrals, sculptures and paintings of the Renaissance, to the art schools, galleries, salons and museums of modern Europe.

Today, we live in the wake of diverse scholarly, artistic and political efforts to study, explore and express the relative differences and fundamental similarities of humanity. All evidence points to four key ideas:

1 | There is no universal standard for human expression.

2 | People do the best they can with the resources that are available.

3 | There is no material on Earth that cannot be used to express human faith, passion and intellect.

4 | The popularity of a style (the unique trace of the individual hand in a material) cannot be universal, for style is always developed in response to unique local circumstances.

In short, an absolute definition of beauty, let alone a rigorous linear history of its progress or development, is impossible. Nevertheless, such insights remain esoteric, and most people remain proud, chauvinistic and narrow-minded when it comes to assessing their group's accomplishments, world view and capabilities.

Furthermore, the foundation for the content standards of the modern communications industry was based on the "classical" European models of what is considered beautiful and meaningful. John Berger's 1972 book and documentary: *Ways of Seeing* explores these issues thoroughly, serving as an effective bridge between the "classical" period and our modern era of constant recombination.

Though high-speed travel, global telecommunications, and mass manufacturing haven't destroyed the roots of ethnocentrism and male dominance, such technologies have often contributed to the destabilization of the chauvinist perspectives.

Through communications technology in particular, the "history of everything" has been made available to more people today than at any other time. In some academic circles the very idea of history has been called into question, and in many practical areas of everyday life history has become heavily de-emphasized. If we are free conceptually to mix-and-match aesthetics, references and histories through web searches, and digital production tools, what then is the value of a "classical" or rational order?

EXAMPLE 2.1 (ACO 1.1): Showing Off My Stuff

Desire for commercial products is still generated based on images of the female body. Often presented as close to naked as the law and public opinion will allow, these images descended from the nudes of sculptors and painters. The still life paintings of food, game, gilded cutlery and flatware once commissioned by the rich have become the high-definition close-up images of fast food found in commercials and on the sides of truck trailers. Even familiar commercial images of Hawai'i: lush and powerful landscapes, plant life, and the welcoming Hawaiian woman, all have their roots in the work of artists like Paul Gauguin.

Art And Design

2.0.0 Introduction

The work of fine artists such as Paul Gauguin have had a powerful influence on the commercial communication arts. What would the Hawaiian Airlines logo look like from a 100% indigenous perspective? Would such a thing have even been possible based on Hawai'i's cultural history?

Though movements in fine art continue to have a profound impact on commercial communication and design, their role has diminished tremendously since the latter half of the 20th century. Now the cycles that drive the development and promotion of technology–cars, home appliances, consumer electronics and phones–takes priority over whatever "spirit" an era's art or design movement may have.

EXAMPLE 2.2 (ACO 1.1, 1.3): Web 2.0

The rounded corners and glassy reflection aesthetic popular among late 1990's web designers was arguably invented by graphic designer Michael Okuda during his work on *Star Trek: The Next Generation* television series (1987-1994). Through its hardware and software products Apple Inc. refined, codified and brought Okuda's aesthetic into the physical world. This look subsequently became the baseline for a wide range of graphic and industrial design for everything from toasters and irons to automobile interiors. Though Okuda is a trained designer, the aesthetic he pioneered is associated with popular television show instead of an artistic movement. See a thorough discussion here: http://www.davidmihm.com/blog/design/what-defines-the-web-20-aesthetic/

What Masters?

Modern image processing filters in smartphone apps and professional production software can emulate the techniques of painting masters (see the 1998 film *What Dreams May Come)*, and the look of any film, video and photographic format.

At the same time, modern medical, scientific and military visualization technologies have introduced a whole new vocabulary of imaging based on measuring electromagnetic waves, from x-rays and magnetic resonance, to lasers and microwaves. Because most people are casually familiar with such radiation-based images, their aesthetics of transparency and "high tech" are frequently deployed to lend a "scientific" feeling to communications.

Meanwhile, the Internet archives vast libraries of fonts from across history and cultures, and provides instant copy-paste access to a significant percentage of human visual history. Every day a new tool for adding to and manipulating archives of digital content is introduced to the world.

Such resources will continue to proliferate, and will be increasingly managed by its users, not formal institutions. The growth and development of Wikipedia (whose reliability steadily improves) exempli-

Art And Design

2.0.0 Introduction

fies the community management of knowledge and assets that will characterize the future.

The cut-and-paste aesthetic of the mash-up and the remix was born in underground and experimental literary, artistic and audiovisual cultures. Digital technologies brought the strategy to popular culture, where companies such as Facebook, YouTube and Pinterest have attempted to create appropriate platforms for creation, storage, delivery and discovery–along with business models to exploit them.

Of course the infinite accumulation of digitized events and assets will always require organization. The strategies for doing so will be automated and contingent, driven by search routines and recommendation engines like those used by NetFlix and Amazon. Formal, authoritative histories (the kind that used to validate artists, designers and writers) ***will become just another product, another way of seeing***; they will lose their exclusive privilege as centralized bodies of knowledge. History will become an expression of a designer's predilections, the calculated product of market research, and a function of computer programs that manage and present content.

To research, design and deliver commercial messages to a modern popular audience one needs to know very little "real" history, for that audience has been liberated from a linear visual history since the 1980's introduced them to postmodernism through MTV's aesthetic. The content of a typical young person's music player spans decades, there are thousands of blogs dedicated to the history, minutiae and detritus of any given form of artistic expression, and a weekend with a music streaming service can get anyone up to speed on the basics of any genre.

The Professional Communicator anticipates this infrastructure growing ever more capable, content-rich, and deeply integrated into peoples' lives. "Stylistic movements" and "genres" will become intensely personal and documented through social networks. From the perspective of the market, the real-time and long-term aggregation of consumers' tastes, preferences, purchases, social relationships and physical locations is more important than formal cultural history. The Professional Communicator will use history's fluid state, and the power of digital technologies to freely evoke, invoke and sample anything that will get and hold a viewer's attention.

EXERCISES 2.1 (ACO 1.1):

1 | Have students identify and discuss their three favorite logos. Most students will associate the logo with something larger, for example a sports team. Have them discuss what changes in the logo would make them change their opinion about it. Determine if any students wear logos or icons for purely aesthetic reasons–that is, without necessarily **identifying** with the brand or the company.

2 | Have students identify and discuss their three favorite works of art–without getting into the debate of what is and isn't art. Here you may find many students who "like" art for purely aesthetic reasons, unlike their dedication to a brand.

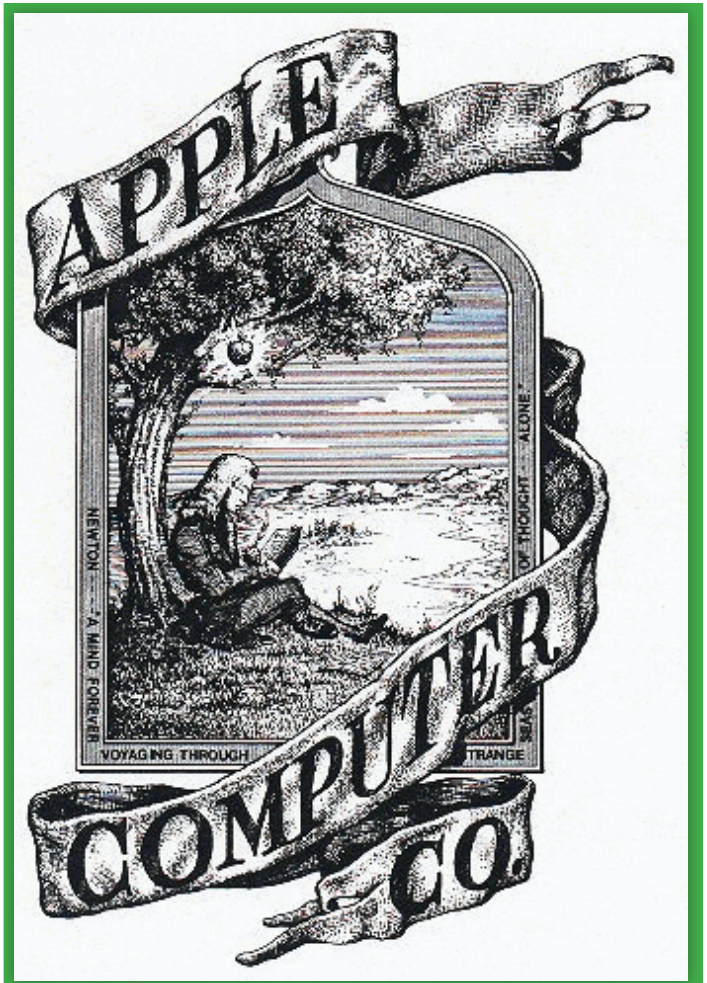
3 | (High School only) Determine if students are familiar with the current trend of t-shirts that prominently feature images of women in sexualized poses. Ask what seeing or wearing a shirt like this means to them. What are they saying about themselves? What are they saying

to other people, to women in particular? For student groups that are too young for this exercise, switch the topic to the "Defend Hawai'i" shirts that are currently popular.

4 | Consider the human practice of creating sculptural images of their religious figures and imagine two statues: one is Hawaiian and carved from wood, the other is Christian and carved from marble. From the perspective of someone whose faith is not represented by either figure, how is one expression "better" than the other? Does the monetary value of the material it is made out of indicate the degree of the user's faith? Can the artistic standards of one culture be applied to another? If so, how?

5 | Consider the histories of the Apple, Inc. logo here: http://tinyurl.com/4yrkvso, http://tinyurl.com/6duhco4. Read the comments as they give an insight into people's reactions to the logo and this one story. Compare the "crest" that served as the original representation of Apple computers and the rainbow apple that superseded it. In particular, discuss the mystical or spiritual connotations of the slogan: "Newton... A Mind Forever Voyaging Through Strange Seas of Thought ... Alone." Though the logo's history is explained in purely rational terms, does it discount Jean-Louis Gassé's interpretation: "You couldn't dream of a more appropriate logo: lust, knowledge, hope and anarchy." Contrast this sentiment with what students associate the Apple brand with today.

6 | In a typical group of people, the majority will know that the pyramids of Egypt exist. Take a close look at the back of a one-dollar bill. Make up a story about how the image of a pyramid ended up on the back of a piece of US currency. Next, do a little bit of Internet research and synthesize the "truth" of how the pyramid ended up where it did. Undoubtedly one will come across many facets of mythology, symbolism, and maybe even a bit of conspiracy theory. What does it add up to? Does it change the meaning of the dollar bill?



The original logo/seal for Apple Computer Incorporated, circa 1976, by Ronald Wayne.
Image Source: Wikimedia Commons

Art And Design

2.1.0 A Shorthand Visual History

Post-mastery

The serious study of art and design history now requires the same kind of natural talent, self-discipline and training associated with a would-be professional athlete; it certainly isn't for everyone. A student of design and communication has to transcend casual interest and ambient participation and genuinely care about images and the stories they project: how they are constructed, where they come from, and why they express what they do.

What then are the basic configurations of knowledge that will the would-be Professional Communicator need? The following shorthand visual history connects historical moments in human visual history to their ongoing use in the contemporary communications landscape.

2.1.1 Animals

The earliest examples of human art feature renderings of animals, executed at a time when people were nowhere near the top of the food chain. Some have argued that the earliest visual arts were related to ritual magic focused on hunting, fertility and death. These paintings and etchings may have been attempts at fixing meaning, "pausing reality" so that it could be studied and contemplated.

If we are willing to accept such "official" hypotheses about the origins of art, then we should also acknowledge the possibility that our most distant ancestors were just as interested in representing and interpreting reality for the sheer pleasure that it affords. Why would humanity's distant ancestors enjoy art and design any less than we do today?

The most ancient works from southern France and South Africa demonstrate that humanity's ability to render images of the world with accuracy and passion is over 20,000 years old. These are the works that survived in protected caves or were carved into stone; but there is no history for all of the artwork that was created in biodegradable media! In any case, one might argue that we haven't really improved on the painting and etching techniques of the past. Though these renderings certainly don't have the representational accuracy of photographs, they are nevertheless as precise as the technology and aesthetics of the day could provide. Ancient works are now celebrated as being just as significant and powerful as any art produced during the so-called Historical periods of time when humans used writing to record life.

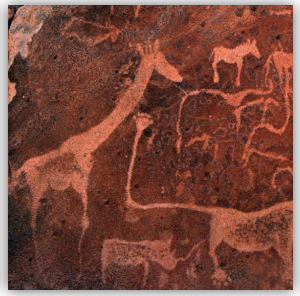
Chauvinism leads some people to believe that modern humans are somehow better than ancient ones. We have come to recognize that it is the medium through which we express our connection to animals that has evolved, not necessarily our capacity to recognize or represent them.

Today animals domesticated by graphic design sell breakfast cereal, define the visual identity of professional sports teams, and represent the spirit of cars, nations and weapons systems. One might even argue that our ability to see, recognize and respect animals has declined over the millennia.

Art And Design

2.1.1 A Shorthand Visual History: Animals

1 | Chauvet Caves
Wikimedia Commons



2 | Twyfelfontein
Wikimedia Commons

3 | The Sphinx
Wikimedia Commons

Hello Kitty
© Sanrio

1 | Chauvet Caves, France (-31K years ago): The oldest known cave paintings, featuring styles and techniques that many contemporary artists and designers continue to emulate and draw inspiration from. The caves includes sequential images of animals that have been interpreted as a kind of animation, and animals that may have been drawn in ¾ perspective. This cave was the star of Werner Herzog's documentary *The Cave of Forgotten Dreams*.

2 | Twyfelfontein, South Africa (-10K years ago): Some of the oldest rock engravings in Africa (and therefore in human history), these works depict lions, giraffes and numerous other clearly identifiable animals. Like the work in Chauvet, that in Twyfelfontein mixes "realism" and graphical stylization.

3 | The Great Sphinx, Egypt (-2.5K years ago): The mostly-lion + man sphinx is the largest and one of the oldest statues on the planet. Though the symbolism behind the hybridity of the sphinx is debated, it is generally agreed that it has to do with a symbolic relationship between man's "higher" intellectual capacities and the power of his "animal" side.

4 | Hello Kitty (1974AD): Designed by Yuko Shimizu, Hello Kitty is one of the most recognized brands in the world. She made her debut on a coin purse, and has since spread (legally and illegally) to high-end jewelry, clothing, lunch boxes, and stickers for the backs of cars. This image is her very first appearance on a coin purse.

EXERCISES 2.2 (ACO 1.1, 1.3):

1 | Do some visual research on the use of animals on cereal boxes and discuss the relationship between the cereal and its sponsor. What are the marketers trying to say? Among the bears, frogs, and tigers, why do you think certain animals are selected as mascots for certain cereals? How have the characters changed?

2 | Identify and discuss three products from Hawai'i that use animals as sponsors. Can you determine any differences in the thought behind Hawai'i animal sponsors and those developed elsewhere?

3 | Why do you think Hawaiian Airlines did not use an animal as a part of its branding?

Art And Design

2.1.2 A Shorthand Visual History: Portraits

2.1.2 Portraits

Many cultures turned their observation and rendering skills on each other, and people began creating images of themselves. Social, religious and military leaders were the most popular subjects, as were those who accomplished great deeds.

1 | King Tutankhamun
Wikimedia Commons

2 | Roman politician
Wikimedia Commons

3 | Julius Caesar
Wikimedia Commons

In the set of three images above we see a golden funeral mask for the Egyptian pharaoh Tutankhamun, a caricature (cartoon) of a political figure found in the ancient city of Pompeii, and a marble bust of Roman Emperor Julius Caesar. In ancient times important people were often depicted in such a way that their strongest traits were emphasized, idealized or exaggerated, either through style or design, or the material itself. Here, gold symbolizes wealth and light, while marble not only mimics the interaction of light on skin but has a permanence that matches the importance of the subject. The graffiti on the other hand, tells us that people have always used whatever is at hand to talk back to their leadership through satire.

Art And Design

2.1.2 A Shorthand Visual History: Portraits

In the trio of images below we see Leonardo Da Vinci's "Mona Lisa" (1503–1505) a portrait of the cubist artist Picasso (1912) by his peer Juan Gris, and a computer generated fully 3D reconstruction of actor Jeff Bridges from the 2012 movie *Tron: Legacy*. These images mark different instances of portraiture's steady move away from exclusively representing high-end church, political and military leadership (though Bridges' synthetic character was a hybrid spiritual and military leader.)

1 | The Mona Lisa
Leonardo DaVinci
Wikimedia Commons

2 | Portrait of Picasso
Juan Gris
Wikimedia Commons

3 | CLU
© Disney

These examples are concerned with more than creating an accurate representation of a subject. They are all layered with technical and aesthetic meaning. The noble portrayed in Da Vinci's painting has her famously mysterious smile and a constantly evolving history of earlier versions revealed through sophisticated scientific analysis. There is a self-referential humor in Gris' Cubist portrait of one of the style's pioneers: of course Picasso should be remembered through the style he pioneered and not some earlier classical technique. An underlying theory of Cubism: the simultaneous vision of multiple perspectives, is quietly packed into the synthetic Jeff Bridges. Existing as something between a static sculpture and an interactive puppet, the Bridges portrait isn't formally Cubist, but because it represents a younger version of the actor (required by a plot point in the film) and a digital version of his character in the movie it retains a sense of multiple and layered viewpoints.

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2.1.3 A Shorthand Visual History: Women

Portraiture is about a kind of preservation of the image, the attitude and the spirit. Popular photography would forever transform but not abandon these standards. The function of portraiture survives in magazine covers, posters, billboards and just about every other channel of communication that expects the viewer to identify or compare him- or herself with the subject of the message.

Even something as common as a celebrity magazine cover elevates the portrayed subject to a level of importance that is above that of the viewer; we don't call them "stars" for nothing.

2.1.3 Women: A Special Case

In the communication arts there is no more common, and at times exploitative, vehicle for sending and supporting messages than the image of a woman.

One of the oldest images of women known to history is the so-called "Venus" of Willendorf (right). This sculpture, between 24 and 26 thousand years old, was discovered in 1908, buried along the banks of the Danube river near the town of Willendorf in Austria. Though this website (http://goo.gl/dgp35) presents a thorough art historical overview, the truth of the matter is that nobody actually knows what purpose the figure played or who carved it. Explanations for its meaning range from being a symbol of fertility carved by a man to a self-portrait carved by a woman. However, a few important undisputed facts make the image important:

The "Venus" of Willendorf (-24K years ago)

1 | It is a richly-detailed expression of intentional communication that defies the stereotype of "cave people" being stupid, crude, or fundamentally different from modern humans.

2 | Having survived thousands of years, it cannot help but communicate with us today; but we don't necessarily understand its message.

3 | Some early humans were as artistically gifted as any living today.

4 | We will probably never know what the statue "really" means; its message will always depend on the mentality of the viewer.

5 | Similar figures have been found all across Europe, indicating the cultivation of a meaningful style by a large, or at least mobile, population of users and creators.

In many cultures, forces of nature and divine entities are associated with male and female energies and psychologies. Broad categories of human activities like hunting, child-rearing, agriculture, nurturing, and warfare were

Art And Design

2.1.3 A Shorthand Visual History: Women

associated with men and women and symbolized in artworks.

But there are no hard and fast lines: Kali is a Hindu goddess of destruction and rebirth, the Yoruba people of West Africa associate rivers and oceans with volatile feminine energies and personalities, and the Hawaiian volcano goddess Pele presents another example of female energies not being passive or exclusively associated with softness, passivity or weakness.

EXAMPLE 2.3 (ACO 1.1): Distilling Female Power

In the graphic to the right we see a staircase of images that move from ancient religious representations at the bottom (row 1) to the modern Photoshopped composite that is the modern model seen in magazines (row 5).

Row 1: (left to right) the Hindu goddess Kali, the Chinese goddess Quanjin, the Hawaiian goddess Pele, the Egyptian goddess Isis, and the Greek goddess Athena.

Row 2: (left to right) photographer Man Ray's *Tears* (1932), Gustav Klimt's *Portrait of Adele Bloch* (1907), Botticeli's *Birth of Venus* (1485), and Marcel Duchamp's *Nude Descending a Staircase* (1912).

Row 3: (left to right) supermodels from various issues of Vogue Magazine: Twiggy by Justin de Villeneuve (1970), Kate Moss – emerging from a pool like Botticeli's Venus – by Bruce Weber (2006), and Naomi Campbell by Herb Ritts.

Row 4: (left to right) Hollywood movie stars Lucy Liu and Audrey Hepburn.

Row 5: "ideal" woman collaged from various "perfect" elements.

SO, WHAT HAPPENED? DO THE WAYS THAT IMAGES OF WOMEN HAVE CHANGED SAY SOMETHING ABOUT HOW WE UNDERSTAND THEM?

Art And Design

2.1.3 A Shorthand Visual History: Women

As we move from the bottom step to the top we see a reduction in diversity as well as a kind of disempowerment of the female image. In the West, it is largely superficial standards of female beauty and sexuality that have been preserved as their images migrated from the sacred to the commercial. Commercial images of women, drawing on a relatively limited range of body types, complexions and hairstyles, are attached to messages in order to increase their appeal.

Though every culture has its own inherent standards of beauty, global commercial communication arts have created an obsession with "perfection."

PRODUCTION EXERCISE

"Filling An Empty Niche"
2.1.3 Art and Design
Sketchup
ACO 1.1, 1.2, 1.3, 2.2, 3.1

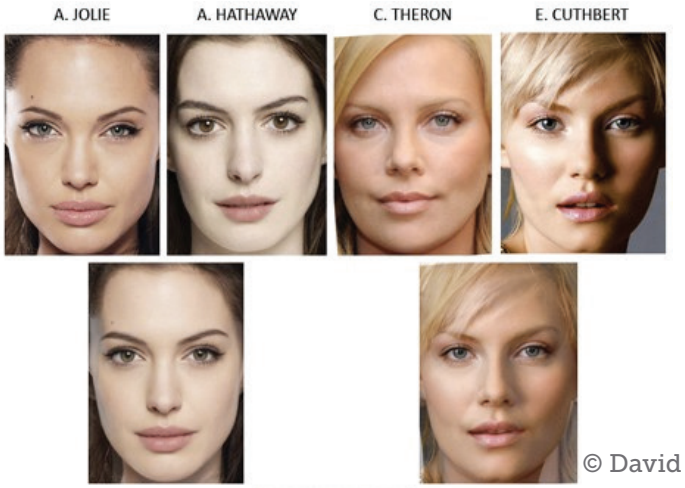
1 | Explore the use of symbolism in visual communication through images of women and their power.

2 | Build a 3D model that represents this exploration.

DOWNLOAD: creativityacademies.com/2.3.0-01.pdf

EXERCISES 2.3 (ACO 1.2, 1.3, 2.2):

Consider this image: http://goo.gl/qcqJp (also excerpted below). It uses digital technology to combine the features of "the world's most beautiful women" to produce the "perfect" woman at the bottom.



© David Keyes

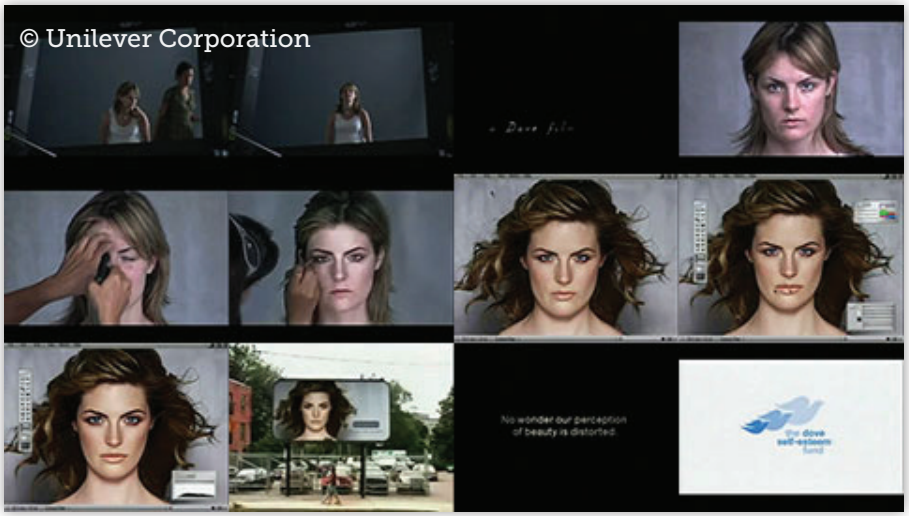
1 | Discuss how these women might have been selected for this visual experiment.

2 | Is the approach pursued to arrive at the final image in any way scientific?

This link features the original article: http://goo.gl/7Ipj. The comment thread below the article illuminates how emotionally charged ideas of beauty and perfection remain, along with the volatile connotations of skin color and ethnocentrism. In commercial communication these issues are always just beneath the surface, and Professional Communicators are fully aware of how they can be manipulated.

Art And Design

2.1.4 A Shorthand Visual History: Objects



The still above is sampled from this YouTube video: http://goo.gl/aaFoY (and related "Photoshop makeovers"). It depicts the "evolution of beauty…" with the assistance of an army of lighting technicians, makeup artists, hair stylists, photographers, digital artists, designers and marketing experts.

1 | What is the intended message of the video and who is the target audience?

2 | How might peoples' reactions differ if the featured woman was of Asian or Samoan ancestry?

3 | Does the fact that the ad is produced to promote the Dove beauty product brand complicate its intended message?

4 | How does presenting the video in an educational context change its meaning?

2.1.4 Objects

After animals and people, humans rendered images of things. A staged or otherwise designed image of objects is called a still life. Like so much else in the fine arts, still life paintings celebrated the material wealth and possessions of those who could afford to commission them. With painters pursuing photorealism with all the passion of today's video game developers coaxing ever-more-spectacular effects and simulations out of PCs and consoles, nobles, merchants and kings could surround themselves with permanent images of their possessions.

In the following examples we see a series of still life images, ranging from an early rendering from Pompeii (1 | upper left) to a synthetic image generated through a technique called ray tracing (6 | lower right). The top center image (2 | Anne Vallayer-Coster, *The Attributes of Painting,* c. 1769) represents the use of oil paint to achieve a level of realism that the Pompeiian image cannot attain despite the care taken to render the reflections on the apples. The upper right image (3 | *Still-Life with Apples and Grapes*, 1880) by Claude Monet) represents a more impressionistic approach while the lower left image (4) by Pablo Picasso demonstrates his typical breaking of the rules via collage and Cubism. The bottom center image (5) is a commercial photograph whose visual history goes all the way back to the older paintings shown here.

Art And Design

2.1.4 A Shorthand Visual History: Objects

1 | Pompeii fresco

2 | *The Attributes of Painting*

3 | Still-Life With Apples and Grapes

4 | Picasso still life

5 | Advertisement

6 | Raytraced image

However, just as the subjects of portraiture have moved away from nobility and into everyday life, so has the subject of the still life. Today's commercial imagery is 100% dependent on conventions established through oil painting as early as the 1500s in Europe. Note that the function of the still life remains the same: show the viewer what he or she may possess, only now the viewer–unlike the European noble of old–does not already possess the objects on display.

Traditionally, owners of still life paintings would surround themselves with these images in a way that made them part of the architecture or interior decoration of (typically) a home... In the modern communications landscape this relationship has exploded to define the general environment and shape the character of all forms of media. Today we are constantly surrounded by images of wealth or having them beamed at us, as if we were lords, but we don't yet own the objects in these commercial still life tableaux.

PRODUCTION EXERCISE
"Still Life Through Time"
2.1.4 Art and Design
Adobe Photoshop
ACO 1.1, 1.2, 1.3, 3.1

1 | Understand how to use layer interactions and displacement maps to simulate textures.

2 | Understand the basics of digital collage, with an emphasis on selecting elements for their meaning and not just their texture or color.

DOWNLOAD:
creativityacademies.com/2.1.4-01.pdf

Art And Design

2.1.5 A Shorthand Visual History: Landscapes

1 | *The Harvesters*
Pieter Brueghel the Elder
Wikimedia Commons

2 | Starry Night
Vincent Van Gogh
Wikimedia Commons

3 | Windows XP Desktop
© Microsoft

4 | Pine Trees
Hasegawa Tōhaku
Wikimedia Commons

5 | Tron Legacy Landscape
© Disney

2.1.5 Landscapes

The landscape is one of the last fundamentals of human visual history, representing a relationship between people and nature or the built environment. The far left thumbnail in the series above shows *The Harvesters* (1565), a scene of peasants at work in the fields by Pieter Brueghel the Elder. Van Gogh's *Starry Night* (1889) is second from the left, featuring a fantastic sky above a small village. In the middle we see the default desktop wallpaper from Microsoft Windows XP. Second from the right is *Pine Trees* (1593), a Chinese landscape painting by Hasegawa Tōhaku. The rightmost image is a computer generated still from *Tron: Legacy* (2012). The set to the right invites comparison of these paintings in close proximity. What do all of these images have in common? The position of power that the viewer gets to occupy.

Views in landscapes are composed such that sky, land and any human-built features are balanced and in some kind of visual dialog. The meaning behind the presence or absence of people or architecture varies between cultures and their respective traditions.

Art And Design

2.1.5 A Shorthand Visual History: Landscapes

In general, the European tradition of landscape imagery pursued realism, while in China and Japan the landscape tended to be much more abstract and poetic: a approach that would not emerge in Europe until impressionism.

EXERCISE 2.4 (ACO 1.1):

Compare *Pine Trees* (left) and *The Harvest* (right) below.

1 | Discuss the role that realism plays in these two approaches to landscape when both artists are clearly attempting to render what they see.

2 | How would you describe the difference in emphasis found in these two paintings? Both are trying to evoke the "essence" of their subjects, but one is populated with peasants while the other is almost ghostly.

3 | How would you describe the spirit of these two paintings?

Both *Pine Trees* and *The Harvest* are experiments in perception. *The Harvest* renders an image of everyday life that could be interpreted as political in its depiction of labor: a subject that nobles weren't exactly celebrating in their art. *Pine Trees* is a different kind of experiment. Rather than rendering the landscape as if it were a photograph, Hasegawa Tōhaku's painting could be interpreted as an effort to recreate the experience of vision itself: we don't really take in an entire landscape in one glance; our eyes focus on things as our attention shifts, and we attempt to build relationships between the things we see. The relative difference in detail between the front pine tree and those in the background emulates this way of seeing, without sacrificing a realistic representation of the trees themselves.

It is this kind of "fantastic" vision that influences the landscape of *Tron: Legacy*.

Art And Design

2.1.5 A Shorthand Visual History: Landscapes

PRODUCTION EXERCISE
2.1.5 Landscape Archaeology

Adobe Photoshop
ACO 3.0

1 | Explore the different landscapes discussed in this section through Photoshop's layer mask tool.

DOWNLOAD: creativityacademies.com/2.1.5-01.pdf

In this comparison of the *Tron* cityscape and the Microsoft Windows XP default desktop (left) we look at the role of landscape in the digital era. *Tron: Legacy* tells a story of revolution inside a computing system populated by sentient programs and their digitized human users. The film uses sprawling urban space as an organizing principle and Film Noir (see Chapter 3) as a visual style.

Meanwhile, the idealized rolling hills and open sky of the Windows desktop (a stalwart of everyday corporate office work) is meant to evoke a welcoming space beyond the computer. The optimism and possibilities evoked by Windows in real life is a stark contrast to the dark, brooding minimalism of *Tron*'s computer fantasy.

EXERCISE 2.5 (ACO 1.1):

With the emergence of massively multiplayer online (MMO) games that allow thousands of people to play together in persistent worlds, the concept of the virtual landscape has emerged.

1 | Find and discuss a series of screenshots of landscapes from MMO games in comparison to traditional landscape images.

If a landscape can be considered as a relationship of natural features, does the information that describes our world have comparable features?

2 | Search for images with the phrase "3d data visualization" and discuss the results in comparison to traditional landscape imagery.

3 | Consider the Windows XP desktop and *The Harvest*. How might you relate the role of landscapes in the depiction of peasants laboring in a field to the everyday work of sitting in front of a computer?

Art And Design

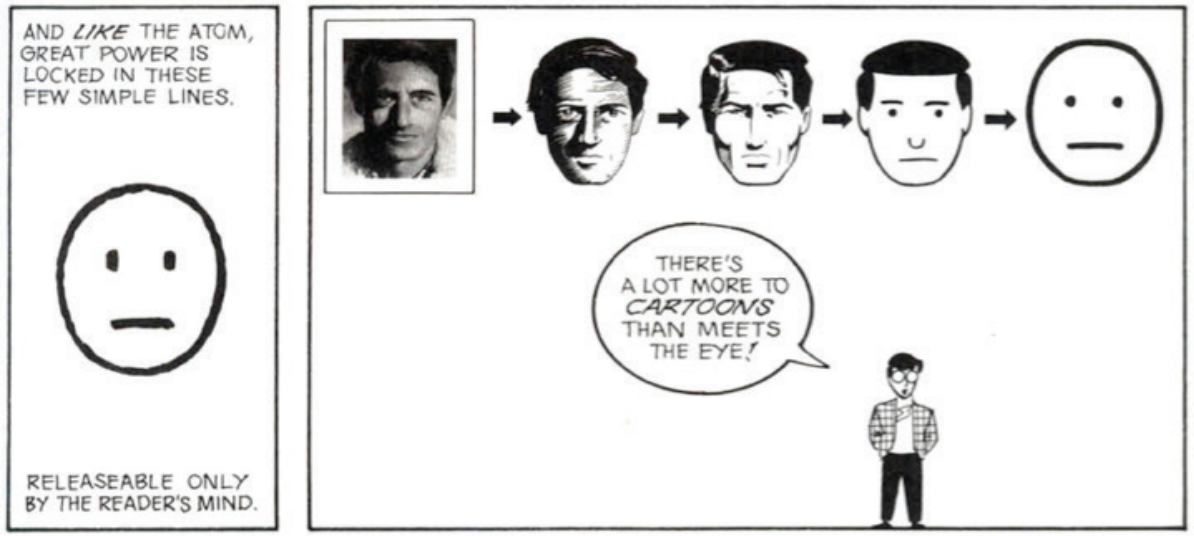
2.1.6 A Shorthand Visual History: The Spectrum Of Representation

Where the traditional Western landscape painting was an extension of the idea of ownership and control expressed through the other visual histories discussed here, it evolved to represent what can be generally understood as *knowledge*.

2.1.6 The Spectrum Of Representation

After animals and people, some humans furthered their graphical exploration and started refining and stylizing their representations of everyday life. From the beginning artists had a choice regarding the level of realism they sought to express, constrained of course by their materials and environment; there are expressive techniques that can be executed with burnt charcoal that cannot be done with chipped stone or dyes derived from plants.

What emerged was a **spectrum of representation** that is easily explored if one thinks about the present and considers all of the different styles of cartooning that have developed over the years. Visual theorist Scott McCloud illustrates this spectrum and argues that the "simpler" the figure, the more readily viewers are encouraged to identify with and project themselves into it.



© Scott McCloud from *Understanding Comics*, an excellent guide to general visual literacy in a form students can easily digest and elaborate on.

Viewing ancient art from this perspective, the lack of "realism" may have been a kind of technology that allowed the works' early audience to remember, review and perhaps relive their experiences–not unlike the role that television shows and movies play in modern life.

McCloud's spectrum of realism establishes a reliable range of expression with the mirror at one end and the mask at the other. In the mirror we are expected to recognize ourselves (even the image doesn't necessarily match our ethnicity or gender) and through the mask we are expected to lose ourselves–which may explain why young children can be so powerfully motivated by cartoon characters and advertisers continue to make use of them to sell products to adults.

Art And Design

2.2.0 Significant Mo(ve)ments: An Abbreviated Timeline

PRODUCTION EXERCISE
2.1.6 The Spectrum of Representation

Adobe Illustrator
ACO 3.0

1 | Starting with a grayscale photo of yourself, experiment with Adobe Illustrator's "Auto Trace" function to generate a spectrum of images similar to McCloud's above.

DOWNLOAD:
creativityacademies.com/2.1.6-01.pdf

1 | Egyptian hieroglyphics
Wikimedia Commons

2 | Sumerian hieroglyphics
Wikimedia Commons

3 | Illuminated manuscript
Wikimedia Commons

4 | Moveable type
Wikimedia Commons

2.2.0 Significant Mo(ve)ments

There is some value in having a rough guide to visual history, if only to know which direction North is while navigating the wilds. The heavily compressed timeline of graphic design moments below is meant to introduce landmarks of recognition. The following selections have been made based on their ongoing influence on contemporary design and aesthetics.

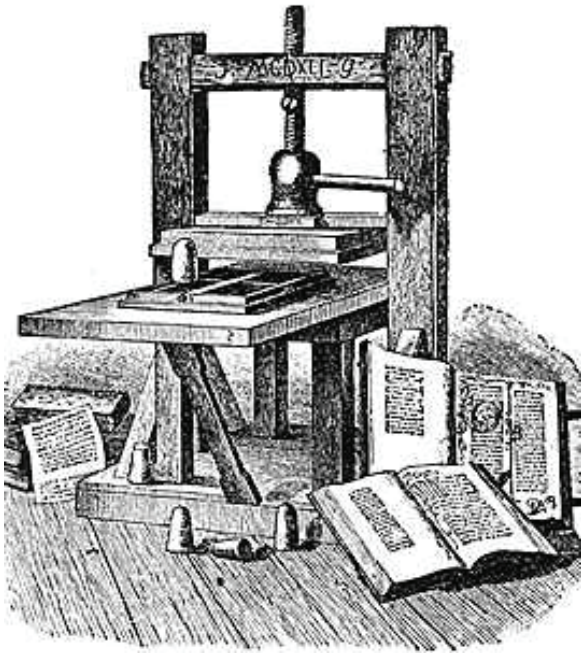
1, 2 | Hieroglyphics, Egypt and Sumeria (-3100 years ago): Two of the more sophisticated writing systems of the ancient world. Both pushed boundaries of stylization and minimization, reducing representations of people, animals, and natural objects to their barest essence. We are currently in a revival of the hieroglyphic, or pictographic, approach to visual communication.

3 | Illuminated Manuscripts (698AD): inspired monks elevated the pages of one-off bibles to dizzying heights of faith through elaborate calligraphy, fantastic landscapes and obsessive intricacy intended to evoke the mind of God. Today we find many designers inspired by this level of intense detail working with the same focus, believing that the work put into a design elevates its value. Image search "book of kells."

4 | Moveable Block Type (1045AD): The Chinese standardize printing by introducing ideograms on wood blocks. The profoundly radical concept of recycling a handful of characters for later use is lost on us today because the pixels on our screens are constantly recycled to form any conceivable image. However, one can look to the use of clip art, audio loops and templates in presentation and media authoring software to recognize the essence of moveable type's theory applied to other formats.

Art And Design

2.2.0 Significant Mo(ve)ments: An Abbreviated Timeline



The Printing Press (1436AD): Gutenberg's game-changer cloned the Bible (putting monks out of work) and inspired the printing and distribution of pornography, technical manuals, philosophy texts, poetry, and fiction without the oversight of the church. At this point, schools took over the job of judging what knowledge was and wasn't appropriate. Experiments in graphic design begin here. Centuries later the personal computer, freshly powered with primitive word, image and design processing tools, was heralded as the new printing press. The truth of this wouldn't emerge until the Web evolved as a distribution medium, finally giving people an ease of circulation to match the ease of production.

Art Nouveau (1880AD): A style of graphic design, decoration and architecture inspired by organic forms, born in Europe with worldwide influence. Known for its sinuous shapes, romantic fonts and renderings of women, it was among the first Western art movements that sought to design all aspects of everyday life. Image search: "art nouveau graphic design."

Futurism (1909AD): Born in Italy, Futurism was obsessed with speed, technology and war. It can be read as a reaction to the "decadence" of Europe before the First World War. Contrasted with the flowers, vines and richness of Art Nouveau, Futurist design was spare, angular, wild, and trying to capture multiple perspectives at once. It also made use of sampling and collage. Google Image search: "futurist graphic design."

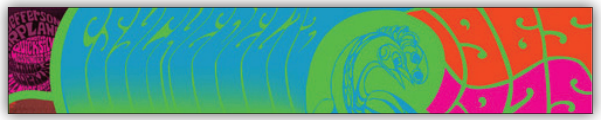
DaDa (1916AD): A nonsense word invented to stand in for "anything but art and culture as we Europeans are dealing with it now." DaDa was a multidisciplinary movement that sought to undermine the emphasis on rationality and order that was imagined to be stifling Europe at the time. If Futurism celebrated war and a kind of headlong chaotic charge, DaDa celebrated individual inebriation and the disorder of a really good party. Its collage aesthetics would be rediscovered when digital typefaces allowed mixing and matching (moveable type!) and computers became powerful enough to manipulate sampled imagery. Image search "dada graphic design."

Art And Design

2.2.0 Significant Mo(ve)ments: An Abbreviated Timeline

Bauhaus (1919AD): Consider Bauhaus to be Futurism and Dada brought under control. Like many of the movements in this timeline, Bauhaus design attempted to address all aspects of everyday living from furniture to silverware (even a chess set! tinyurl.com/6pg7yvm) in addition to graphic communication and fine art. Its tendencies were towards minimalism (the removal of all extra decoration), the use of specific primary shapes (the square, circle and triangle), and restricted color palettes.

Contemporary web design, always struggling with making things readable and clear in the context of an invisible grid, owes a huge debt to the Bauhaus school of design. Image search: "bauhaus graphic design."



Psychedelic (1965AD): Heavily influenced by hallucinogens, the freedom of the hippy era, experimental rock and roll, and social upheaval. This was the first major break from the global reign of Bauhaus which had spent the last fifty years informing everything from corporate logos to airport and highway signage. Born in the United States, psychedelic design was largely explored through tie dye, concert posters and album cover art. Unlike previous design movements, psychedelic did not originate in cultural institutions such as schools and galleries. It developed "in the streets" so to speak, and did not intentionally extend its approach to other media such as furniture, cars, or architecture.

Though it can be compared to Art Nouveau and Illuminated Manuscripts in its expressive use of colors, curves, intricacy and "trippiness," psychedelic avoided a grand narrative of aesthetics and beauty, and was one of the first visual movements to be associated with a lifestyle. Though relatively short-lived and now relegated to marketing campaigns based around nostalgia or irony, it has had a lasting impact on visual culture. Its masterpiece is probably "The Yellow Submarine," an animated feature based on the music of The Beatles. Image search: "psychedelic graphic design."

Olympic Pictograms, Mexico (1968AD): Designed by Lance Wyman as part of an interdisciplinary and multicultural production team, the pictograms representing each of the sports extended Katzumi Masaru's designs for the 1964 Tokyo Olympics. As an international event, the pictograms and the games' overall design style were meant to transcend language but also evoke Mexico's own rich and ancient traditions of visual design.

Art And Design

2.2.0 Significant Mo(ve)ments: An Abbreviated Timeline

Hip-hop Graffiti (1974AD): Though New York subway graffiti was born in the 1970's it wasn't until the 21st century that this form of painting and calligraphy from the streets would come to dominate popular graphic design and marketing. Because it is an approach to writing letters and words, Hip-hop graffiti joins other forms of calligraphy as a mode of artistic expression. One can imagine the painted subway cars as "illuminated."

Graffiti has the fluidity of Art Nouveau, the antagonism of Futurism, the anarchic spirit of DaDa and an internal code of stylistic discipline comparable to Bauhaus. Like Postmodernism, it reflected an era that mixed everything that came before it, and like Psychedelic, it first expressed a popular lifestyle (and counts album cover art from the 60's and 70's among its inspirations).

Hip-hop Graffiti was also inspired by advertising itself in two key ways: 1) the sheer ubiquity of visual identities and brand names on television and in public space amplified the existing spirit of "Killroy was here," impromptu moustaches adorning posters, and lovers' initials etched into tree bark; 2) the animation of modern advertising: consider the "spectaculars" of Times Square in New York, fluid with light, color and arrows spelling out, highlighting and moving logos and brand names. Image search "<city> graffiti."

1980AD–Postmodernism: Like DaDa without a spirit of absurdity, this design style reflected a broader movement of sampling and appropriation that started in architecture. Best exemplified by the chopped and mixed up video interstitials and bumpers that MTV commissioned during its early years, postmodernism devoured all of the styles that came before it and benefitted from the introduction of desktop publishing software. It took the collage aesthetics of Futurism and DaDa and stripped them of politics and critique.

Without a war to fight, postmodernism was left with the aesthetics of consumerism: corporate logos, clean fonts, popular brands, and neon. Chief among its rules was stating that there were no rules, which resulted in radical experiments in illegibility, clashing colors, extreme magnification and other gestures that tried to foreground the printing and design process itself.

As computers got better and image-processing software became more powerful, its combinatorial aesthetic continued to evolve, arguably culminating in the layouts and cover designs for magazines such as Wired and Raygun. Today, all the major brands from Obey to Ed Hardy are expressions of postmodern design as they raid the fields of popular and historic visual culture for source material to remix. Image search "postmodern graphic design," "raygun magazine covers," and "wired magazine spreads."

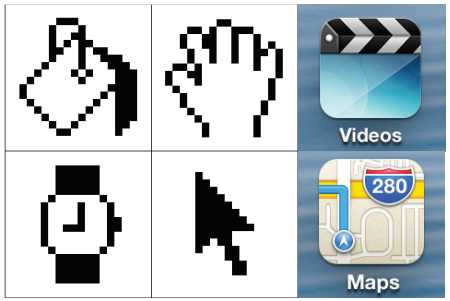
Original Macintosh Icons (1984AD): Designed by Susan Kare, the first Apple Macintosh (and Windows 3.0) icons ushered in a revival of hieroglyphic communication.

Faced with the daunting task of communicating the complex functionality of the newly invented graphical user interface, Kare joined the most ancient human concerns with our newest requirements. The result: a timeless miniature codex including arrows, hands, paint buckets, spray paint

Art And Design

2.2.0 Significant Mo(ve)ments: An Abbreviated Timeline

cans, pencils, notebooks that have defined 21st century visual space.



Original Macintosh icons (designed by Susan Kare) and new iOS icons. ©Apple, Inc.

Though our computers are no longer as constrained in their rendering capabilities and our full-color computing icons now glisten, shine, and feature drop shadows, they have not evolved beyond Kare's original intent. Here we have another example of the medium continues to evolve long after some specific problem of communication has been solved.

QUICK LITERACY BLOCK (ACO 1.1)

Review the Wikipedia entries and Google image search results for the following modern artists:

Jackson Pollock

http://en.wikipedia.org/wiki/Jackson_Pollock;
http://tinyurl.com/7wqvd5s (image search)
CORE TAKEAWAY: Pollock was about interrelated processes of his body and the behavior of paint in motion and under gravity. Pollock's work is famous for eliciting the "I can do that" reaction to modern art... But most people don't and can't.

Salvador Dali

http://en.wikipedia.org/wiki/Salvador_Dal%C3%AD
http://tinyurl.com/7gtku8w (image search)
CORE TAKEAWAY: Dali wanted the viewer to think he or she was dreaming when looking at his paintings. In Dali's case, a watch is clearly recognizable for what it is, but its presentation leads to a question of why someone would paint it as if it were melting, or what such an image might mean.

Paul Cézanne

http://en.wikipedia.org/wiki/Paul_C%C3%A9zanne
http://tinyurl.com/6lt74hq (image search)
CORE TAKEAWAY: Cézanne was trying to explore how humans see: each brush stroke can be understood as a reflection of a tiny movement of the eyes. The paint delivers color at the level of the brush stroke (like a pixel in a computer display) and meaning at the level of all strokes recognized together. Cézanne was also trying to represent nature in terms of its underlying geometric forms: cylinders, spheres and cones for example; this too is anticipates the ways in which modern computer graphics are first built out of simple shapes and then made to appear more realistic by wrapping them in textures.

Art And Design

2.3.0 Art vs. Design

2.3.1 What Is Art Anyway?

The Indo-European root of the word "art" is "ar-." It means "to connect" or "join," and is found in words like "architecture," "articulate," "arm," and "harmony." According to that deepest meaning, everything could be considered art. But obviously everything isn't, at least as far as the art market is concerned.

We tend to define that which is celebrated in museums, the lobbies of important buildings, and old world churches as art. But museums today feature shows on architecture, movie posters, typography, and graffiti.

If you were presented with an attractive photograph of a landscape and an attractive photograph of a car, would you be able to declare one thing to be art and the other not-art?

Recognizing an instance of communication as art is above all dependent on context, or the total set of circumstances and motivations in which it is presented.

Nevertheless, there is a simple thought experiment that can help you determine which direction an instance of communication is leaning. If the image leads you to ask the question *why*, then you are most likely dealing with its artistic dimension. The question of why is tightly bound to the general notion that art "means something" that might not be readily accessible to the viewer. Art expresses and contains mystery. Art is something that rewards us on the perceptual level but also demands that we learn something about it. When confronted with artwork one of the most natural questions to ask is why an artist made one choice over another in making the work.

2.3.2 And What Is Design?

The complement to the question of why is how? Design is distinguished from art because it is generally trying to solve an explicit, typically commercial, problem. The Professional Communicator asserts that the client's problem can be solved, and proceeds to propose how the problem will be solved... Via this photograph, this typeface, this copy, at this size, in this location, for this amount of time. Because the relationship between the resulting design and the goal of the sale is so tightly bound, design solutions tend to leave little room for interpretation, no matter how creative or evocative the assembly of the design elements are.

A strong design should first trigger a question as to how the viewer can satisfy the desire created by the message: by going to a location, by comparing something to something else, by believing in the story being told. Due to the intense creative competition of the advertising industry there is a second "door" into the message that is based on encouraging the viewer to ask how the message itself was created. When one is confronted with a thrilling mystery of design, the question is typically "how did they do that?"

Though the following samples of early advertisement design (1904-05) do not necessarily provoke a "how" question, and they certainly don't provoke one of why, at least not for a turn of the century shopper. All the information is there: client name, some explanatory copy, an address, and some kind of symbolic device that has nothing at all to do with the product.

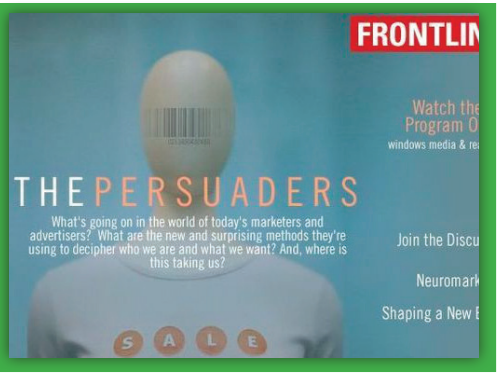
Art And Design

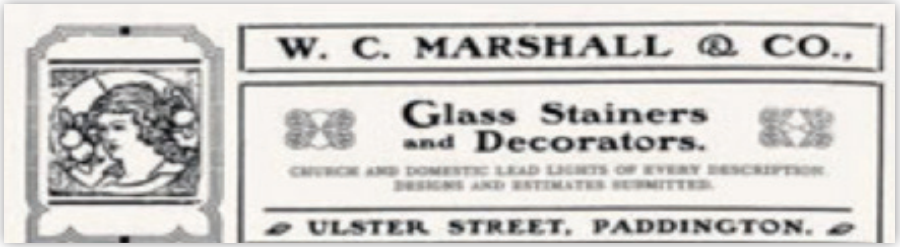
2.3.0 Art vs. Design

QUICK LITERACY BLOCK (ACO 2.1, 1.3)

Watch the PBS Frontline documentary "The Persuaders" in order to get a good overview of the back-and-forth between art and design. Pay particular attention to the storyline of ill-fated Song Airlines.

THE PERSUADERS
2004 PBS FRONTLINE
http://tinyurl.com/5scxd (website)





Note how the viewer's attention is directed based on the use of various fonts, framing elements and decorative edges. Both ads are trying to work with the same amount of energy provided by the interaction of type and line in a black and white context. If they were competing to sell the same product, which do you think would be the most successful?

Lets say that W.C. Marshall & Co. had twice as many sales as J. James & Co and ran their ads next to each other in the same paper. Assume for simplicity that design drove a consumer's choice. From the design perspective, one might ask how the Marshall ad generated more customers than James. Is it because there is a luxurious image of a lady to the left of the copy and the (most likely) male shopper likes pretty ladies? Is it because it's easier to see what Marshall & Co. does?

It is significant to note that contemporary web design deals with these same factors and variables, having inherited the solutions (and problems) featured here. The introduction of color and motion has both complicated and improved the fundamental effort of clearly communicating.

Art And Design

2.3.0 Art vs. Design

QUICK LITERACY BLOCK (ACO 1.1)

Review the Wikipedia entries and Google image search results for the following modern designers.

SAUL BASS
http://en.wikipedia.org/wiki/Saul_Bass
http://goo.gl/3VkfY (image search)
Core takeaway: Saul Bass invented the modern cinematic title sequence that would lay the groundwork for what various motion graphic and animation software would democratize for everyone else. He also set the standard for bold, highly memorable logo designs that include United Airlines, AT&T, Girl Scouts of America and Quaker Oats.

ZAHA HADID
http://en.wikipedia.org/wiki/Zaha_Hadid
http://goo.gl/Md48B (image search)
Core takeaway: As one of a handful of architects with global influence, and one of an even smaller number of women in such a position, Hadid demonstrates that the production of elaborate, highly imaginative spaces is not an exclusive practice. Further, because the demands of architecture are about functionality, her radical designs must nevertheless adhere to the requirements of the real world.

SIR JONATHAN IVE
http://en.wikipedia.org/wiki/Jonathan_Ive
http://goo.gl/T0EkD (all of Apple's designs)
Core takeaway: Sir Jonathan Ive is the industrial designer who is responsible for ushering in the use of computers and digital technologies as an expression of one's lifestyle instead of one's occupation. Before his experiments with rounded corners, translucent plastics and cutting-edge metals and glass, computers were recognizable as black or beige boxes.

Art and design are two sides of the same coin. You cannot consider one side without eventually flipping it over or drilling a hole.

Consider the problem faced by the executives of Song Airlines in *The Persuaders*. Given that their goal is to get people flying on their planes consistently enough to generate profits, they are taking a huge risk with design that does not mention something as obvious as airfare, or that they are an airline at all! The natural question consumers had when confronted with a Song ad was why, not how.

Listening to Professional Communicator Andy Spade talk to his clients, it is clear that he is attempting to artistically engage Song's audience on a more emotional level. He wants to generate the same sense of wonder as a Cézanne landscape.

Of course "how?" and "why?" are not exclusively restricted to design and art respectively. One can ask a why question about an intriguing design or a how question about a powerful work of art. The thing to recognize is that any instance of communication contains elements that trigger both questions.

Art And Design

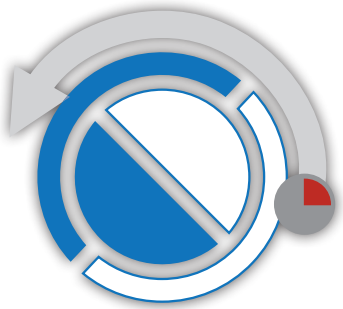
2.4.0 Judgement

Asking meaningful questions of "why?" about a work of art inevitably leads to technical questions of how the compelling effect of the work was achieved. Similarly, a work of design can be so successful that it encourages that encourages one to ask "how?" which leads to questions of why the designer made those choices.

"Why?" and "how?" questions are just places to start, subjective reactions to initial observations. Both questions lead to their "inverse," and to similar depths of understanding. It is the systematization of these questions, coupled with recorded observations and attempts to find patterns, that leads to understanding.

Judgement begins with a subjective assessment. The simplest decision is a binary one: "is it art, or is it design?" Unless explicitly defined as one or the other, the context of one's experience determines the initial reaction. The Creativity Academies model asserts that "behind" art lies design, and "behind" design lies art. Each side hides its own complement or opposite.

If we could actually come to a definitive conclusion about art versus design, especially in our contemporary landscape of multimedia accessed by beautiful electronic objects, there would be no point to the discussion. Time is the factor that sets judgement in motion. A simple argument can change a perspective, flipping art to design or vice versa. More important is the constant motion of judgement that transforms the perceived object or message from one to the other.



Though the "art versus design" question begins with an either-or moment, the true test of a Professional Communicator's skills is negotiating the challenge of *art becoming design*, or vice versa. As with so many other aspects of modern communications, time is a crucial factor. The transition from one to the other could take minutes, hours, or a mere instant; it could be the result of a debate, argument, inspiration, or simply seeing things differently.

The Professional Communicator has a fluid, nimble literacy with both art and design, and is focused on when to emphasize one or the other when creating a message.

The most important skill that a Professional Communicator develops is the ability to determine the type of reaction that she or he wants to produce in the receiver.

Commercial communication is highly sophisticated today, and though there are still aspects of marketing that are hit-and-miss, the underlying strategies for delivering messages are based on scientific

Art And Design

2.4.0 Judgement

understandings of human behavior, psychology, perception, and aesthetic reactions.

It is these deeper reflexes and patterns that establish peoples' initial judgements about art and design; they are the "hooks" and "levers" that the Professional Communicator installs and manipulates. The next chapter, Mediation, delves deeper into this system.

Chapter 3
Mediation

GOALS

1 | Understand that communication takes place on multiple levels simultaneously. These levels are structured by language, laws and technology.

2 | Understand mediation as the increasingly complex intervention of communications strategies and technologies between people and the world around them.

3 | Recognize narrative and style as the components of a message and understand how successful communication requires that attention be paid to both.

4 | Understand the concept of an audience and how Professional Communicators model them via sampling, and relate to them via targeting.

ADDRESSES A&C CORE STANDARDS:

ACO 1.2, ACO 1.3, ACO 3.1, ACO 3.3, ACO 5.1

Mediation

3.0.0 Introduction

3.0.0 Introduction

Today it is difficult, and some might say unnecessary, to characterize the entirety of the communications landscape because it is so dense, complex and ever changing. However, we can strip away the specifics of any communications element to reveal a core set of interrelated means by which humans engage the world. These modes of interacting are as follows:

- **Prelinguistic Mediation**: knowing and navigating the world without language or words. Examples include gestures, postures, gazes and looks, facial expressions, bodily adornment, and fashion.

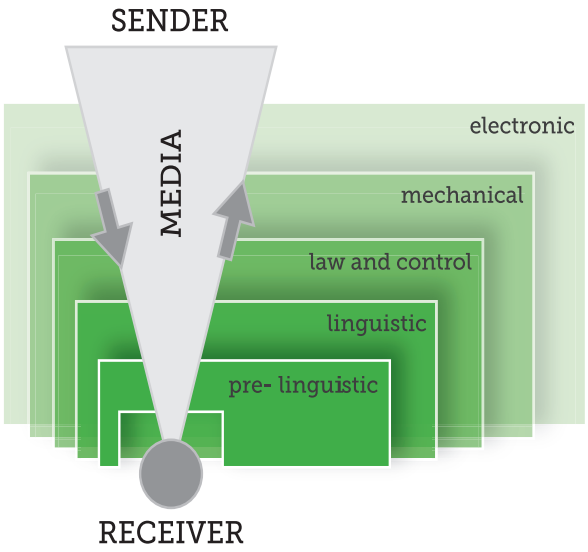
- **Linguistic Mediation**: knowing and navigating the world through language and words. Examples include oral and written histories, debates, speeches, fiction, dialog, philosophy and literature.

- **Law and control**: knowing and navigating the world in terms of laws, traditions, and other systems of control. Examples include architecture, highways, churches, cities, the Internet and mobile technologies.

- **Mechanical mediation**: knowing and navigating the world in terms of tangible means of communications delivery and consumption. Examples include print media, billboards, clothing, signage, computing hardware.

- **Electronic mediation**: knowing and navigating the world in terms of intangible means of communications delivery and consumption. Examples include the Internet, computing software, video and television, radio and film.

These five modes of experience can be arranged in roughly historical order, from prelinguistic to electronic mediation. Each system builds upon or incorporates the structure of the previous one. However, it is important to recognize that they do not supersede or replace each other. Rather, media crosses and interpenetrates each mode, often in very complex ways that we generally take for granted.



Communications media can travel through several layers as they circulates between sender and receiver.

Professional Communicators such as advertisers, campaign managers and production designers continue to research and develop media that addresses all five modes simultaneously.

Apple's latest iteration of its iPhone represents a good example. Like any other smartphone on the contemporary market, it represents a sophisticated integration of communication arts that targets the consumer/user of the device, but also plays a large role in the development of the technology itself.

However, Apple pioneered a sensitivity to design and interaction that has consistently set industry standards: rounded corners, drop shadows, candy coated reflections, icons that bounce back as if they were physical objects, and advertising campaigns featuring highly

Mediation

3.0.0 Introduction

seductive everyday use cases of their products.

Apple's strategy tightly integrates the five modes of experience in ways that borrow from dozens of design histories, in ways that are simultaneously futuristic, classical, and also as old as hieroglyphics.

EXAMPLE 3.1 (ACO 1.2):

Prelinguistic Mediation evolved at the same time as our material and mechanical interactions with the world, but we may not have been aware of them in the same way that we are today. In another view, our most sophisticated electronic interfaces, tools and networks are used to produce and deliver content that could be considered emotionally and morally unsophisticated. Finally, marketing experts direct their messages to the human emotional, reactive, "reptile mind" (the oldest part of our brains) to influence decision-making.

As communications media have evolved they have engaged more of the capacities of human perception. Their historic and functional interdependence is complex, but in contemporary media we can find echoes of much older forms. Above we see a poetic interplay between hieroglyphics, a cartoon dialog bubble, modern iOS application icons and the round-cornered keys of an old mechanical typewriter. Though the lines of relationship aren't direct, it is clear that they coexist as a kind of knot. We moved from pictograms to alphabets, which led to written language, and eventually computer programs which have reintroduced us to pictograms!

For a more detailed exploration of the intertwined histories of communication, see *Chapter 2: Art and Design*, particularly section *2.7: Significant Mo(ve)ments–An Abbreviated Timeline*.

Mediation

3.0.0 Introduction

DEVICE	PRE-LINGUISTIC	LINGUISTIC	LAW & CONTROL	MECHANICAL MEDIATION	ELECTRONIC MEDIATION
Modern smartphone	Use of icons and physical gestures for navigation and use.	Voice-driven interactions, reading, typing.	The operating system dictates what can and can't be done with the phone.	Still a physical object with buttons to control operation.	Access to the Internet; connection to a radio network for sending and receiving of data.
Television					
Radio					
Newspaper					
Face-to-face					

EXERCISE 3.1 (ACO 1.2, 1.3, 5.1):

1 | Complete this table for the other "devices" in column 1. Students should consider the relative intensity (and constant presence) of each mode in these media that precede the smartphone. They should also consider how their awareness of each modes increases or decreases depending on the device. For example, the intensity of the LAW/CONTROL aspect of a newspaper is low because there are few restrictions on how it is used. A device like the television has a different intensity of LAW/CONTROL because it requires electricity, an investment in hardware, and a passive mode of interaction. However, in both cases there are diverse technical, legal, cultural and ethical constraints on what can and cannot be presented.

2 | Have students consider how people understood the world during the eras that these different devices dominated communications in society. People who got their information exclusively through the newspaper related to the world in a different way than people who now get their information exclusively through their smartphone. As a result, various communications landscapes can differ radically, even when based on the same information.

Mediation

3.1.0 Pre-linguistic Mediation, Linguistic Mediation

The deep integration of communication and experience achieved by Apple's interfaces encompass the entire range of human visual production that preceded them, including type layout, animation, photography, cinema, and mapping. The intensity of this integration is overlooked or ignored because our everyday lives are so closely tied to the interactions Apple and its competitors have designed. It is therefore a challenge to recognize or analyze how the system is actually working. All media depends on human perception. Creativity Academies identifies five modes of perception that are explored in the following section.

3.1.0 Pre-linguistic Mediation

This is the human encounter with the energies of the world before we wanted or needed words for those experiences. This was a landscape of sights, sounds, temperatures, smells and emotional states. The earliest forms of art were born in these depths of prehistory, as were the ancestral practices of science.

We theorize that observation and action were once barely distinguishable; but not so much that being good at one or the other didn't improve chances for survival, or provide the means of reflecting on or appreciating of life itself for its own sake.

Much of the modern communications landscape is dependent on prelinguistic mediation, from the color codes we use to indicate where we can and cannot go in public spaces (red for "no," green for "yes"), to the poses of confidence, aggression and strength that models strike in their photographic spreads.

All of the prejudices, passions and fears that make our media so entertaining and exploitative are derived from these oldest aspects of human culture.

EXERCISE 3.2 (ACO 1.2, ACO 1.3, 5.1):

Consider how much prelinguistic mediation continues to play a significant role in everyday life.

1 | Identify and describe three face-to-face moments of interaction that are based on prelinguistic mediation. Typically these will be moments where we measure or assess other people based on how they look, behave, carry themselves, or dress.

2 | Identify and describe three radio or television advertisements that make use of prelinguistic mediation. These will be spots that generate emotion (fear, anticipation, excitement) based on sound effects, music, or even the tone and pitch of peoples' voices.

3 | Identify and describe three print advertisements that make use of prelinguistic mediation. These will be ads that address basic human needs: food, shelter, and companionship (which can also imply social bonds and procreation).

4 | Discuss how social media engages people on the prelinguistic level. Social media emphasizes the human need for social connection, mainly through the maintenance and cultivation of the desire to "see what one's friends are up to" for comparison, identification and cohesion. Though what comes next might engage one of the other modes of mediation (through reading or being motivated to make a phone call) it is all based on harnessing prelinguistic energies.

3.2.0 Linguistic Mediation

This is listening, speaking, reading and writing. Through language, humans gained the ability to make consistent connections between external and internal (sensory-motor) representations of those experiences. By sensory-motor we mean the body's relationship between

Mediation

3.2.0 Linguistic Mediation

perception and movement or action: falling, swinging, running, hunting, etc. Language is a very special kind of *internal sensory experience* that can substitute for and simulate *external sensory experience*. The importance (and mystery) of this development of human capacity compared to that of other animals cannot be overstated.

For example the *word* "fear" is neither the *concept* of fear nor the *biochemical state* of fear. The word "fear" is a sign – see *Chapter 5: The Communications Landscape*. Similarly, the electrochemical state of the brain that represents the word and concept of "dog" has absolutely nothing to do with any of the physical or emotional characteristics associated with actual dogs–to say nothing of the concept of "man's best friend." Whatever the neural configuration that supports the concept of "dog" is, neuroscience tells us that it is not a shadow, compression or reconfiguration of an actual dog's physical traits. There is no squashed or deconstructed dog in our heads. "Dog" (different even from "dog leg" or "dog tail" or "dog guts") is a profound translation and transformation of energy that, as artists and poets have demonstrated for centuries, forms the foundation of the human capacity for imagination.

Though artists have understood and deployed the power of metaphor and allegory for far longer than scientists have been slicing brains up into micron-thick sheets (Google: "TED Talks Connectome"), it will be a significant moment in human history when technology can record a brain's state of activity and take all forms of perception literally. When the sensory state of experiencing (or imagining, dreaming or remembering!) a dog can be linked to the concept of "dog" through a consistent configuration of neurons in time, we will have entered the "postlinguistic" era.

EXERCISE 3.3 (ACO 1.2, 5.1):

Consider how the way that words are visually communicated not only create biases and preconceptions but are based on them.

1 | Have students write the word "FEAR" in such a way that they believe that it conveys the idea or concept of fear. They are not allowed to use symbols of fear. Results will include shaky or distorted handwriting or evocations of the thing that causes fear. This is a link to the prelinguistic component of all words: experiences. This has become such a powerful system in communications that we can generate advertisements with words that drip blood, burn, rot and crumble in order to create expectations in people who have not necessarily experienced any violence.

2 | Repeat exercise 1 with the word "ALOHA" with the same restrictions: do not allow students to add symbols of aloha to their rendering of the word.

3 | Search the web for visualizations of the word "ALOHA" (but not images that represent aloha) such as logos, letterheads and advertisements. Have students discuss the contrast between their ideas of aloha and that of these examples. How much of their way of visualizing aloha was based on images that were already placed in their heads by the likes of Hawaiian Airlines?

4 | Discuss what the concepts of aloha and fear might mean when a live brain scan can recognize the emergence of their neural patterns.

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3.3.0 Law And Control

3.3.0 Law And Control

Human societies hold themselves together by agreeing on who can do what, when, and why–in relation to nature and each other. Stories, formal narratives, and descriptions are used to justify these agreements, independent of whether they are fair, beneficial, or even successful.

Systems of law, management and control have always existed among humans, and they have always been connected to the communication arts. Consider how often rules were written into stone tablets or carved into symbolic figures. Humans build and decorate structures, design costumes and uniforms, write music and choreograph ritual gestures in order to represent, evoke and enforce law.

In prelinguistic times, one might imagine law being based on objective survival skills: physical strength, speed, agility, and powers of observation. When everyone involved in a situation understands the task at hand, the clear demonstration of success or failure doesn't need language. The rote imitation of success and shunning of failure is enough to cause groups of people to change their overall behavior, even without a centralized authority.

It is easy to see how, based on their abilities to predict patterns in nature, a human promoted to the role of chief or leader could begin to represent themselves on behalf of those patterns. These leaders moved their societies toward modes of operating in the world that were best suited to their material circumstances. Not only did the circumstances vary but so did leaders' abilities.

Law is management designed to outlive the managers themselves. But society, technology and nature all change, as do the requirements for successful communication arts that document, illustrate and maintain the laws.

EXERCISE 3.4 (ACO 5.1):

Beyond things like traffic and controlled substance laws, copyright and licensing are the clearest examples of law and control in students' lives. Law and control dictate how and where information flows.

1 | Facebook encourages its users to upload all kinds of images, videos and commentary that supposedly belong to the person who is providing it. Under its terms of agreement, Facebook is a co-owner of that content and is free to do whatever they want with it. Though it is difficult to imagine a scenario where Facebook would use an average user's content for something like a marketing campaign, it isn't out of the question.

Reflect on what the user gets from Facebook in exchange for the "co-ownership" of the content that he or she provides. Explore the relationship between the no-charge pleasures of social interaction being granted in exchange for the free labor that is the social interaction itself. Who is in control here?

2 | Extending this idea, consider the fact that Facebook does not license its technology to anyone else to generate revenue, but it does sell advertising. Generally, investors, critics and economists see Facebook's massive archive of user-provided information as the thing that has actual value. It is imagined that Facebook will come up with the means to sell "perfect" advertisements based on information that users constantly provide, 24 hours a day: time, location, what they desire, their preferences and mood.

Imagine what an online advertisement would have to present to you or your social group in order to guarantee that the product would be purchased as soon as the ad was seen.

Mediation

3.4.0 Mechanical Mediation

3.4.0 Mechanical Mediation

Once language took root outside of the human brain: in stone, wood, and metal, it became an extension and expression of all the techniques people had developed to work with those materials. Put another way: each time humans got better at working with a material, some of the benefits of that mastery improved communication, which then improved the material-working process itself. We can see this in action when considering how the mastery of wood led to the production of paper, metal to wire, sand to glass, and electromagnetism to wireless communication.

It is also worth noting how engineering efforts in one area benefit others. The mechanical loom enabled mass fashion the and newspaper printing press enabled mass media; Both were both created in the context of, and thanks to, general and rapidly-improving industrial processes. Today we see improvements in the design and production of microprocessors (a highly sophisticated chemical and mechanical process that is profitable because so many chips are made at once) creating new channels of communication.

A factory harnesses incredible amounts of mechanical energy. It is a massive investment of time, energy, money, labor, organizational effort, management and information processing. The social and political character of the 19th century and the bulk of the 20th was defined by tight relationship between industrial capacity, mass production, mass consumption and mechanical reproduction. The communications strategies that emerged supported this system. 19th century industrialists found themselves producing goods in numbers that far exceeded the number of people who could buy them.

Reducing production to fit actual demand was not an option, so industrialists sought ways to increase demand itself. Innovations in finance (such as the invention of consumer credit) joined forces with a concerted effort to communicate with "the masses" about products for sale. Industrialists had to literally manufacture desire for their products, and provide easy means for people to purchase them. To do so they needed Professional Communicators: copy writers, illustrators, graphic designers, market researchers, and especially psychologists: people who could model other people, guide, and anticipate their behavior.

This is the part of the communications landscape that people are most intuitively familiar with, and the part of their sensory system that is most frequently engaged. This is the realm of mechanically (re-)produced and distributed advertisements, magazines, books, posters, cards, billboards, stickers, t-shirts, and the like; the stuff of an everyday life made of photographs, slogans, eye-catching layouts and precision designed fantasy. This "skin" of modern society, defined as it is by communications technologies and a proliferation of channels, hides the mechanical infrastructure that sustains it.

This is an artificial nature, produced by machines (and machine-like people) in factories, not responding to the elemental necessities of human life, but to peoples' lifestyles. Lifestyle itself is an engineered product, managed by the professions of market research and public relations.

QUICK LITERACY BLOCK: *Century of the Self*, a documentary by Adam Curtis, looks at the impact of Sigmund Freud's work on western culture, in particular how his theories of the unconscious came to define the creation of and rebellion against mass culture. The role of the communication arts of public relations and marketing are considered. Wikipedia entry: http://en.wikipedia.org/wiki/The_Century_of_the_Self. All four episodes are available on YouTube.

Mediation

3.5.0 Electronic Mediation

EXERCISE 3.5 (ACO 1.2, 1.3, 5.1):

How do we communicate individuality when the ingredients are mass-produced?

1 | Have students consider fashion as a communications channel. Have them list four lifestyle categories that they recognize based on fashion: e.g. "surfer," "rapper," "skateboarder," and "goth." Discuss how they predetermine what other people are like based on how they dress. Repeat this discussion with other communications channels such as music, television shows, films and Internet use. The media we consume brands, announces and defines us.

2 | Ask students who consider themselves members of those lifestyle categories to explain how they determine who is "authentic" and who isn't.

3 | Discuss the concept of a "bootleg" or "pirate" copy. Investigate students' opinions regarding ownership of a "real" brand or a "knockoff." Discuss the degree to which having the "real thing" contributes to authenticity in a lifestyle category. Though many may judge others who have knockoff, off-brand or less expensive versions of a product, just as many consider owning such goods as a necessary "stepping stone" to eventually owning the real thing.

4 | Discuss the concept of brand loyalty as a new kind of ethnicity by asking students which smartphone brand they think is better: Apple or Google; which computing platform they think is better: Apple or Microsoft; and which gaming platform is better: Microsoft's, Sony's, or Nintendo's. In each of these cases have them justify their positions and discuss their opinions of people who do not use their preferred brand. Students will be familiar with the vitriol of online forums dedicated to discussing the various technology platforms. They will also be familiar with individuals who might not own the platform under discussion but nevertheless have an opinion about its inherent superiority or inferiority. Discuss how companies achieve this level of loyalty.

3.5.0 Electronic Mediation

As we move from prelinguistic to mechanical mediation, the actual world disappears behind various screens of language, technology, symbol, and story. With the mastery of electromagnetism and some key aspects of quantum mechanics, humans were able to begin translating communication into a digital electronic format. One only has to consider how many songs fit on an MP3 player, how many full-length movies on a hard drive, or the number of websites cataloged by Google to understand the profound impact of this development. Consider this: we have arrived at a point of technical sophistication and capacity that allows us to not only make backups of the Internet on a regular basis (see: archive.org) but monitor some or all of its content in real time (see the FBI's Carnivore system, the NSA's Echelon program, DARPA's Information Awareness Office, and the new NSA data center that broke ground).

These actual and theoretical monitoring systems are a reflection of the explosion of popular electronic communication that has occurred over the past fifty years. Here we say "popular" instead of "mass" because the Internet has shattered the former hierarchical structures of communication. Once-powerful formats such as radio, television, the music industry and the press have been forced to adapt to a situation where there is no longer a huge undifferentiated audience.

The old mechanical models of communication continue to thrive: lots of people still watch live television shows at the same time each week, despite the existence of digital video recorders and streaming media services. Why? Because every form of media evolves with a "layer" of law and control that established it, and in many cases de-

Mediation

3.5.0 Electronic Mediation

fined its financial structure. As a new medium arises it must do so in the context (and constraints) of the law/control system that created it. In closely-related media such as radio and television which both make use of the radio spectrum and similar technologies, we can see how the latter inherited the business and distribution model of the former.

But if we look to the medium of cellular communications we find a different history. Born among telephone monopolies, today's wireless networks were based on point-to-point communications routed through physical cables, supported by a system of monthly fees and by-the-minute rate charges. When these networks went wireless (broadcasting like TV and radio, but with the benefit of lots of small, decentralized and relatively cheap "cells") they preserved "wired" financial and management strategies.

Significantly, as the wireless networks grew in their capacities to transmit data, they found themselves with no content. Their growth was paralleled by a range of developments in data compression and hardware that allowed them to deliver more than just text messages and voice. Suddenly they found themselves turning to models introduced by TV and radio to "fill their pipes."

So began the "convergence" that, when finally joined by the Web and software companies, created a giant roiling stew of all previous communications channels, styles and models. The people that started record labels, radio and television stations and movie studios in the 20th century never imagined that all of these media types would be made available to people through pocket-sized devices. The phone companies were also surprised. Despite deep roots in computing that made managing their networks possible, they never imagined that companies like Apple, Google and Microsoft would end up telling them what to do.

Electronic mediation has "dissolved" human communications at every level from production to distribution to consumption. Any advance or innovation that is made in one of these three areas rapidly spreads to the other two. These innovations in turn change the qualities and capacities of the communication that circulates among them, which then drives another cycle of innovation.

In electronic mediation we have seen a resurgence of the individual ego, because digital media so readily adapts to a wide variety of consumption formats. Returning to the example of the media-packed MP3 player or hard drive, we see that peoples' identities and modes of self-expression are associated with and expressed by their collections of media. Electronic mediation has "freed" people from thinking of themselves as just another face in the crowd, and instead presented them with the opportunity to consider themselves as unique individuals whose tastes, opinions and preferences matter. However, this is largely an illusion or a kind of split personality disorder, since corporations have never had more power at their disposal to target and track consumers. The old surveillance and "mass media" models are alive and well, it's just that it doesn't look that way because so much communication is precision-targeted.

QUICK LITERACY BLOCK: Neuromarketing, or leveraging the direct statistical monitoring of brain activity to influence consumption and decision-making.
http://www.youtube.com/channel/HCttkPTJIMbjo

In an electronically mediated society, Professional Communicators craft the messages that help to govern that society. Though there is a great deal of user-generated content, it is predominantly produced

in reaction to a limited set of ideas that are intentionally presented to the marketplace.

EXERCISE 3.6 (ACO 1.3):

Consider how electronic mediation has radically altered our conception and perception of society and its needs.

Before mechanization, a society's needs were met at the individual level: though people worked in a hierarchy, they were much more self-sufficient. Mechanization's ability to mass produce relatively identical products at a rate that outstripped demand for them brought about the consumer society, primarily through the communication arts in the service of advertising and marketing. This disconnected peoples' basic needs for things like food and clothing from individual-scale production efforts.

1 | "Digitization" has caused similar transformations. Discuss with students what societal needs are possibly being fulfilled by digital mediation. Why do we need smartphones, Facebook and 24 hour news channels? What purpose do they serve?

Many theorists and philosophers have summarized the industrial age as one of profound loneliness, isolation and alienation–after all, most workers in factories had no control over or investment in the commodities they produced.

2 | Has electronic mediation, particularly the social media platforms with their language of "friends," "followers," and "circles," emerged to address the alienation of industrialism? Discuss whether the popularity of social media is correlated with the degree of alienation in the society.

3.6.0 Messages, Narratives, And Style

WHAT ARE YOU TRYING TO COMMUNICATE?

This simple question makes the difference between the success and failure of any instance of communication. The answer is always simple. The problem is that people confuse *what* one is trying to communicate: **narrative**, with *how* one is trying to communicate: **style**. This challenge is expressed by the following formula:

MESSAGE (M) = NARRATIVE (N) + STYLE (S)

If we do some basic algebra on this formula we can grasp a fundamental set of relationships encountered in the contemporary communications landscape.

STYLE (S) = MESSAGE (M) - NARRATIVE (N)

NARRATIVE (N) = MESSAGE (M) - STYLE (S)

There is a difference between wanting to make a movie featuring special effects that shows flying people (style), and wanting to make a movie about a person who can grow wings at will (narrative). The point is not that one element of the message is more important than the other, but that today, style and narrative are frequently produced, consumed and distributed independent of each other.

Mediation

3.6.0 Messages, Narratives And Style

EXERCISE 3.7 (ACO 1.3): SPOTTING EXAMPLES

Remember that every instance of communication has a message. Look at the table below and provide examples of communication that exemplify the equations in each column.

	S = M - N	N = M - S
MOVIE	Transformers 1, 2 & 3	
SONG		
ADVERTISEMENT	Old Spice series	
OBJECT		Hammer

EXAMPLE 3.2: – THE CAR

For each of the examples below, consider the interplay of Message, Narrative and Style in:

1 | A typical rap video featuring cars.

2 | A typical television commercial advertising a car.

3 | A typical print ad for a car.

In the rap video, the car is present to reinforce the rapper's *message* which is typically not about the car itself, but generally "look at me." The rapper's *narrative* contains references to wealth, power, talent, fashion, etc. and the car is just one potent denotative element. The specific make and model of car is selected to represent the rapper's projected identity, or *style*.

In the television commercial, the relationship is reversed. The *message* is "buy this car," an assertion that must be justified. The commercial's narrative is comes from how the vehicle is photographed, and how people are shown interacting with it. Depending on whether the car emphasizes safety, luxury, or utility for example, different *narrative* moments will be constructed. The *style* of the shots (black and white, gritty, saturated, etc.) will reflect this narrative.

In the case of a print ad there is even less ambiguity. The car is photographed to maximize its appeal (*style*), and supplemented with explanatory details in text (*narrative*). Even if the car is somehow transformed via digital production – perhaps decorated with flowers or inviting association with an animal or force of nature–the *message* is the same: "buy this car."

What happens to the message if the television commercial features a famous rapper? In this case the communicator is trying to leverage the viewer's awareness of the celebrity and connect it to the product being sold–but notice how the rapper (or celebrity) serves the car seller's message.

Analyzing the content and meaning of a message is a huge challenge in an era where Professional Communicators can start with style or narrative and come up with "the point" later. Even if the core message of a communications instance is "buy this now," we can no longer make that assertion without also considering the reasoning that determines why the receiver *should* "buy this now."

Two hundred years ago it was sufficient to show a picture of the product, a price, and maybe the brand name a consumer was meant to associate with it. Marketing a politician wasn't much different. But as communications technology grew less generic and more sophisti-

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3.7.0 The Communications Landscape

cated and specialized (adding motion, sound, color, and broadcasting) the audience fragmented according to their geographical location, social relationships, history, and ethnicity.

The more choices of medium a communicator has, the tougher it is to answer the question of what one is trying to communicate; because each medium (visual, audio, interactive) allows the question to be addressed in a different ways.

From the standpoint of professional communication, a message with no intended receiver is a waste of energy. Though the sheer volume of circulating messages might lead one to assume otherwise, most messages that are generated in the modern communications landscape target pre-determined audiences. A Professional Communicator must have a precise answer to the question of what is being communicated, because that answer will influence all subsequent decisions that must be made.

3.7.0 The Communications Landscape

Therefore, if a Professional Communicator is trying to create an effective message about sustainability (for example), she or he must know: 1) exactly what sustainability means in the context of the message, and 2) who the target of that message is intended to be. Is the message meant to change the receiver's mind? Is it meant to reinforce or challenge what they already believe? These questions are all the more challenging when considering the following factors:

1 | The technology for delivering customized messages with sniper-like accuracy steadily improves.

2 | People are exposed to thousands of messages per day (this is called clutter), and they ignore those that do not produce an emotional reaction.

3 | People are not as intelligent, critical or discerning as they imagine themselves to be.

4 | Though people believe they are free to choose which messages they react to, they seldom test this belief because of factors 1, 2 and 3 above.

The members of a contemporary audience consider themselves independent, immune to persuasion, and not part of a mass market. They believe that they are smarter than Professional Communicators, and that they are free to make up their own minds when confronted with the complexity and sophistication of the modern communications landscape. Contemporary social network platforms and customized content delivery platforms reinforce this illusion.

EXAMPLE 3.3: SUSTAINABILITY

The idea of sustainability is popular, and "everybody" supports it. But the number of people with deeply informed opinions or technical knowledge of what sustainability means beneath its surface is relatively small. The number of people who change their behavior in reaction to a message of sustainability is even smaller. Search for: "filter bubble."

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3.7.0 The Communications Landscape

Assuming that a Professional Communicator knows what she is trying to communicate and whom she is trying to communicate with, the matter of exactly who her targets *are* still needs to be addressed. At one time communicators worked with broad categories such as gender, race, income and geographic region. Messages were created to appeal to these generalizations, based on whatever understanding the communicator had; naturally, it was relatively little.

In 1950 an advertiser based in downtown New York knew very little about a middle class kid living on the island of O'ahu. The situation is different in 2013. Not just because the New York advertiser has access to more research, but because that middle class O'ahu kid is constantly announcing his likes, dislikes and habits across the Internet through social media platforms.

Now communicators can organize all of this statistical data into increasingly detailed sub-categories and effectively track peoples' sentiments in real time. Today, even if a message is destined for a static medium such as a roadside billboard, the audience of freeway users that pass it every day is not treated as if they are anonymous. Drivers will tweet, share, and like that billboard long after they have driven past it. The job of the Professional Communicator is to "get in their heads," to connect with what the driver might be thinking or feeling at the moment they pass the message.

EXAMPLE 3.4 (ACO 5.1):

Imagine a Professional Communicator is tasked with promoting a movie in a city with five theaters. Assume that: 1) billboards placed at major intersections around the city were picked as the channel for communication; 2) the success of the messaging effort will be judged based on ticket sales; and 3) the communicator may try to increase sales by putting up more billboards.

A comparison between one weekend's sales and the next can indicate whether or not that was a good choice. But are the billboards the only factor?

Clearly this sequence gets more complicated if we consider word-of-mouth advertisement by moviegoers, if the communicator introduces other channels of communication to promote the movie, or if the movie is any good or not. Interpreting and managing this basic sequence becomes more complex when messages are also delivered via radio, television and the Internet. Further, consider the relationship between communicator and audience when the following factors are also integrated:

- Advance "test screenings" with audiences that are followed by surveys.
- Real-time monitoring of social networks that provide a measure of "buzz."
- Most movies produced now are based formulas derived from success of previous films–this is why sequels and interchangeable themes dominate Hollywood.

In all of these cases, a communicator can not only adjust the promotional strategy, but also even change the film itself to suit the audience's preferences!

Mediation

3.8.0 Audience, 3.9.0 Sampling

3.8.0 What Is An Audience?

An audience is a set of individuals that is the intended target of a message. An audience begins undifferentiated, but over time it can be categorized and described, even if its individual members remain anonymous. This is a relatively easy process based on measuring an audience's reactions to test messages. Such feedback-based systems are highly scientific.

When presented with a message, a receiver (player) can fall into one of three basic positions:

1 | TRUE BELIEVER (TB): one who will tend to engage and automatically favor the message that a communicator is delivering.

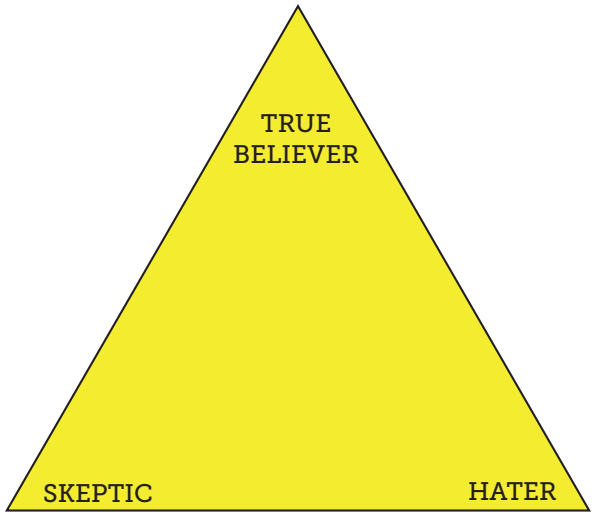
2 | HATER (HT): one will tend to engage but automatically reject the message that a communicator is delivering.

3 | SKEPTIC (HK): one who will doubt but engage and remain open to the message that a communicator is delivering.

We can represent this range of responses with the "audience triangle" below.

No audience member is 100% dedicated to any one position 100% of the time, with 100% of the messages that they receive. Depending on the message, the hater in one circumstance can become a true believer in another and still be part of the same audience. In reality, people locate their reactions to a given message at different points of the triangle, and in most cases they can be persuaded to shift their position. This is why consumer behavior is described in terms of tendencies and not predictions. The job of the Professional Communicator is to engage and then direct attention no matter the position a message receiver occupies in the audience triangle.

The Professional Communicator isn't necessarily concerned with turning a hater into a true believer. A Professional Communicator is concerned with producing a reaction that either reinforces or shifts the receiver's position in relation to the message being delivered.



3.9.0 Basic Strategies: Sampling

The best way to craft a message is to research what an audience wants to hear. Why? Because the communicator is in full control over the relationship and can be as strategic as time, budget and creativity will allow.

Fundamentally, sampling is the act of recording data from a larger population or body of information at a certain point in time.

At a sample's core is a simple question: "Do you agree or disagree with assertion X?"

One can add nuance to this question by creating a scale: "On a scale of 1 to 10, how much do you agree with assertion X?"

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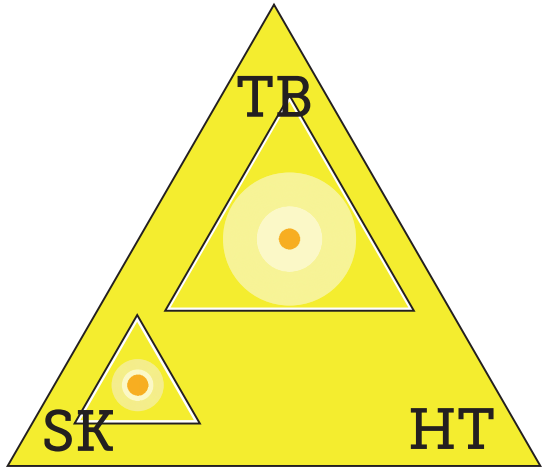
3.9.0 Sampling

Such questions can be asked directly via surveys, or by putting the audience under some kind of surveillance.

Creativity Academies refers to a set of samples as a *composite*: a seamless combination of various variables. The results generate a picture or model of an audience.

With a model of an audience and a way to reach it, a Professional Communicator can craft and deliver a message that will likely be better received than one based entirely on assumptions, stereotypes or guesswork. When done correctly, a composite can literally create reality for an audience by priming it for the messages that they will receive.

Sampling an audience is not a simple action. The act of sampling, of creating a choice for an audience member to respond to, always results in at least two answers. Not all individuals will agree with the sample question, or they may fall in the middle of a given range. Therefore, another audience triangle is created with every sample!



The previous audience triangle is sampled at two points. The size of the two circles represents the specificity of the sample. The smaller circle in the bottom left corner might be a simple yes or no question, while the larger one might represent more choices or a range of possible answers.

Each sample creates a subset, a "miniature" reflection of the larger audience with the same three extremes of True Believer, Skeptic and Hater. The more specific the question is, the smaller the subdivision, until, at the limit, one asks a question that is directed at and only answerable by a single audience member. Conversely, if the question is too general the audience cannot be sufficiently differentiated and the act of sampling becomes useless. The game is to find the sweet spots that exist between these extremes.

EXERCISE 3.8 (ACO 5.1): SIMPLE SAMPLING:

1 | Count the number of people in your class and make a list of their names.

2 | Come up with a compelling yes-no-maybe question.

3 | Before asking the question, try to anticipate where each person will fall in an audience triangle. Who will be a Skeptic, True Believer, or Hater?

4 | Ask each person in the class the question. Do it privately, as if they were voting.

Consider those who answer "yes" to be True Believers, those who answer "no" to be Haters and those who answer "maybe" to be Skeptics. Though their answers may not reflect the actuality of their positions–they may be lying or indifferent–a foundation for communication has been established. A message based on someone's lie is equally

powerful as one based on their truth. Working with the fundamental ambiguity of the virtual is the advantage and risk that sampling affords.

All answers yield valuable information whether audience members say "yes," "no," or "maybe." What the True Believer agrees with also represents what they disagree with, and the inverse applies to the Hater. The Skeptic's position of "maybe" offers possibilities for the Professional Communicator to work with.

1 | Considering the Haters, how could the question be rephrased to make them say "yes?"

2 | Considering the Skeptics, how could the question be rephrased to make them say "yes?"

3 | How do you think your results would change if the question were accompanied by an image? Try this.

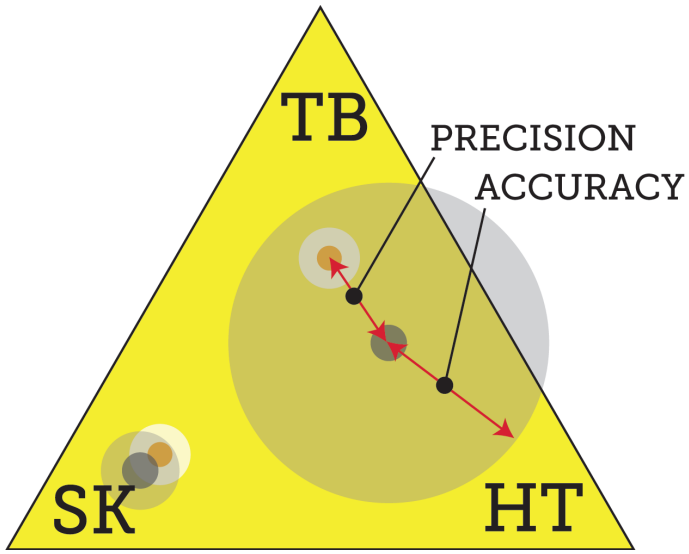
Carrying out the steps above is called *refining* or *tuning* the model. Precise tuning can push a Hater toward being a True Believer or a Skeptic. The communicator has just created a new audience triangle that is ready to be tuned again. If the tuning can be sustained over time (and recorded), the communicator gains additional sample data based on new relative positions.

Ultimately all sampling efforts, even if they're based around presenting music, video, speech, interactivity or journalism to an audience, boil down to "yes-no-maybe" questions. The current Facebook trend of daring people to scroll past images of severely disabled children demonstrates this reality. The image itself is meaningless from the Facebook algorithm's perspective. All the algorithm (and the person who posted the image) is concerned with is whether the image was liked, skipped or lingered on. From the perspective of the Professional Communicators employed by Hollywood to improve the return on investment for films, spending 90 minutes in a movie theater is no different from clicking "like" on a web page.

3.10.0 Targeting

Once a communicator has a composite of an audience, a message can be crafted for delivery. Consider targeting to be the opposite of sampling, like shooting an arrow that, if it is pointed at an audience and released, has to hit somewhere. The goal is to hit the sample point with the message so as to produce the desired reaction in that specific subset of the audience.

But communication can be broad or narrow, wide or focused, specific or general. Consider the following audience triangle where two messages, represented by gray circles, hit. What can you conclude?



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3.10.0 Targeting

The larger of the two represents a very broad message, while the smaller one stands for a focused message. Assume that the two target points are trying to hit the sample points they are nearest to. Which of the two messages would be considered more successful?

Answering this question requires the introduction of two concepts, which will use the arrow analogy:

PRECISION: distance between the arrow and the intended point of the target. A large distance would indicate low precision. In the previous audience triangle, the hit in the skeptic's corner is more precise than the other.

ACCURACY: the area of the circle around the hit. Again, the hit in the skeptic's corner is more accurate because it covers less area.

In narrative terms, precision is what one says, while accuracy is how one says something. A precise style chooses the correct expressions while an accurate one accommodates the audience's expectations.

Accuracy and precision are tightly related measures that say a lot about the overall system of communication. All messages (arrows) have targets because they are created by conscious entities. All messages have an inherent capacity to successfully generate the desired reaction.

EXAMPLE 3.5 (ACO 3.1): "Your pants are on fire!"

Consider this simple message and the following five ways that this message could be communicated to the target:

1 | Saying "your pants are on fire" in the loudest voice possible.

2 | Whispering "your pants are on fire" while making eye contact with the individual.

3 | Screaming "votre pantalon est brûlant!"

4 | Pointing a fire extinguisher at the burning pants and using it.

5 | Waving hands wildly and pointing at one's own pants.

These five messages have varying chances of being successful, based on whether the person is actually listening, knows that they are the target for the message, or speaks French. In a crowded room, everyone might look at their pants in reaction to these messages.

Mediation

3.10.0 Targeting

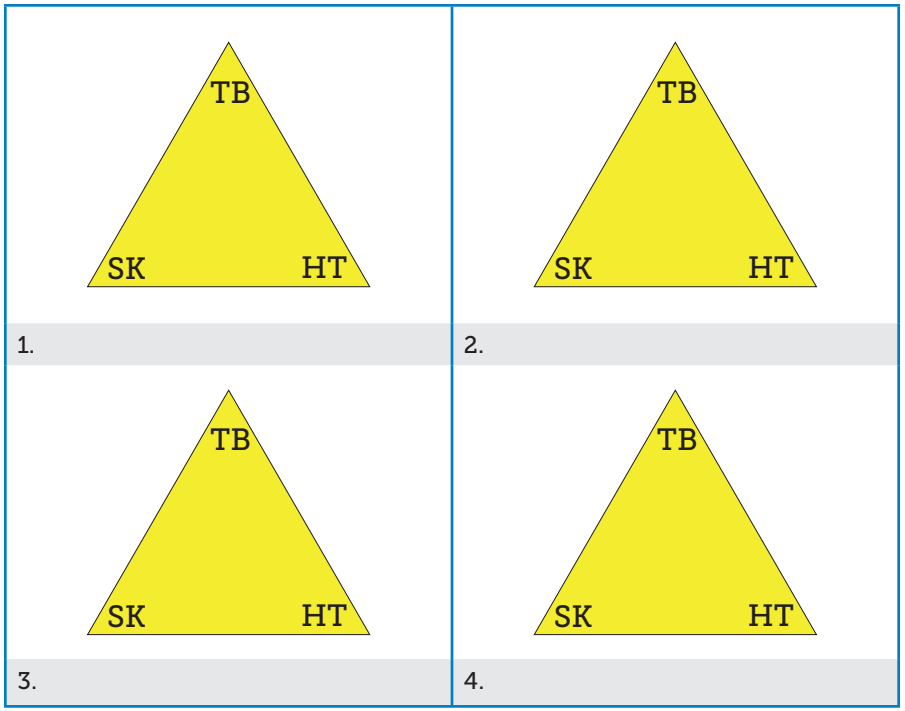
EXERCISE 3.9 (ACO 5.1): Rating Precision and Accuracy

1 | Fill out the following table using a scale of one to ten to rate the precision and accuracy of the messages in the following table.

	Accuracy	Precision
YELL OUT "YOUR PANTS ARE ON FIRE!"		
WHISPER WITH EYE CONTACT.		
SCREAMING IN FRENCH.		
USING A FIRE EXTINGUISHER.		
GESTICULATING WILDLY.		

2 | Divide the class into several groups and have each one generate a list of four commercials that they are all familiar with. For each commercial, have the students collaborate to determine the core message. Next, each student should determine where they are in an audience triangle and rate the accuracy and precision of the core message (1-10 scale) from their individual perspective.

COMMERCIAL MESSAGE	Accuracy	Precision
1.		
2.		
3.		
4.		



Mediation

Chapter 4 Critical Visualization Concepts

GOALS

1 | Thoroughly understand the roots of visual communication in the West and their ongoing influence on contemporary communication.

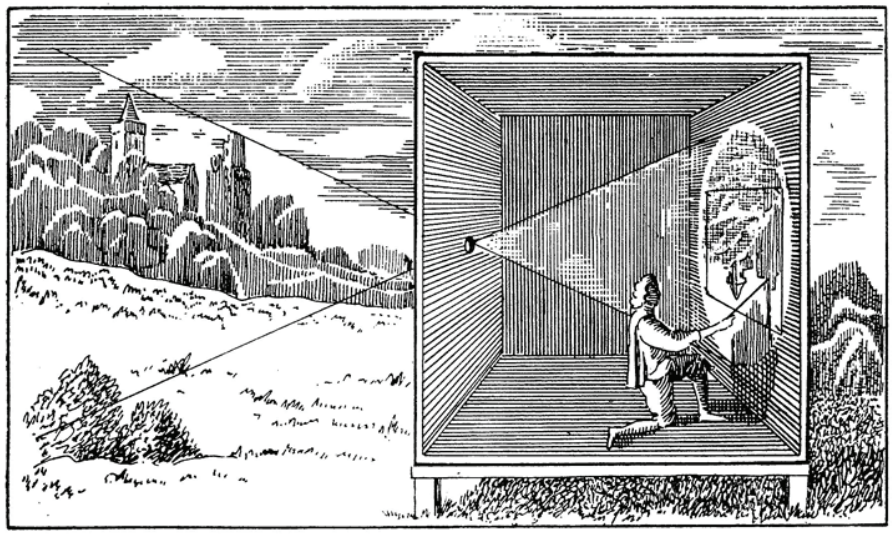
2 | Understand the CA concept of Critical Visualization: a framework that leverages students' existing cinematic and digital literacy to create a context for the creation and critique of communications.

ADDRESSES A&C CORE STANDARDS:

ACO 1.1, ACO 1.3, ACO 2.1, ACO 2.2, ACO 2.3, ACO 3.1, ACO 3.1, ACO 3.3, ACO 5.1

Critical Visualization Concepts

4.0.0 Background



"For, methinks, the understanding is not much unlike a closet wholly shut from light, with only some little opening left... would the pictures coming into such a dark room but stay there... it would very much resemble the understanding of a man."

–John Locke (1690)

The image above depicts a *camera obscura*, a visualization tool that dates back to ancient China and Greece, and came under heavy investigation in Europe during the 1600s. Viewed as a cutaway since the box is supposed to be closed and dark, we see a painter rendering a scene of a castle and landscape based on the projection of light from outside. The only difference between this technology and basic photography is that the image is being rendered by hand instead of captured by a photosensitive surface.

Bringing a proto-photographic image of the world into a darkened space must have been astounding. No human hand intervened in the projection, and there was no artistic interpretation; this was Reality. From its earliest inception, the camera obscura was associated with knowledge and understanding, probably because of the symbolism that illumination has in the human imagination. Where ignorance and confusion (and therefore fear) are associated with darkness, comprehension, wisdom and ideas are associated with light. We see this symbolism in the torches used in university seals, light bulbs above the heads of cartoon characters, and all manner of spiritual artworks that feature radiance, haloes and fire.

In the West, the links between knowledge and vision were established as early as the late 1600s when philosophers like John Locke (quoted above) were linking the operation of the camera obscura to that of the human mind. Locke anticipates photography in this quote, imagining that the "pictures coming into such a dark room" would "stay there." Though we now know the mind is not a "dark box" into which images are projected through our eyes, we never abandoned this basic model for understanding ourselves or for communicating with each other. Today, human memory is still deeply associated with photography and film, while network services such as Facebook and Instagram rely heavily on digital photography to represent their users.

The objective, scientific qualities of the camera obscura have been passed down since the device's invention. Today we enjoy full color images of the most distant galaxies and micrographs of viruses. We watch robots fighting on Los Angeles freeways, with every shadow and reflection rendered according to the laws of physics. Though the function of these types of images leads to different ends, we trust them all for the same reason: they look real, and if they look real they can go much deeper into our imaginations.

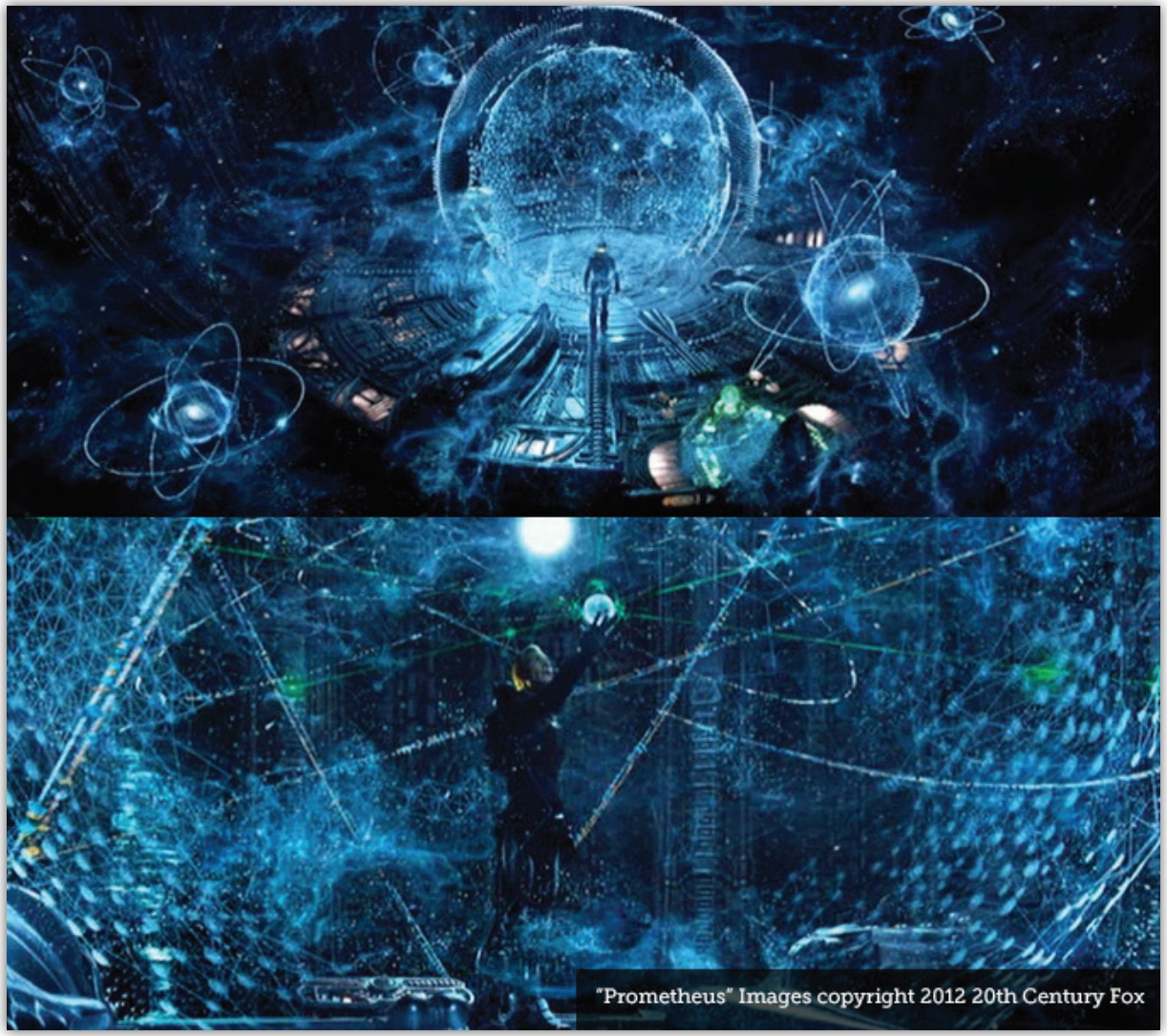
Critical Visualization Concepts

4.0.0 Background

EXAMPLE 4.1 (ACO 1.1, 1.3): The Descendants Part 1

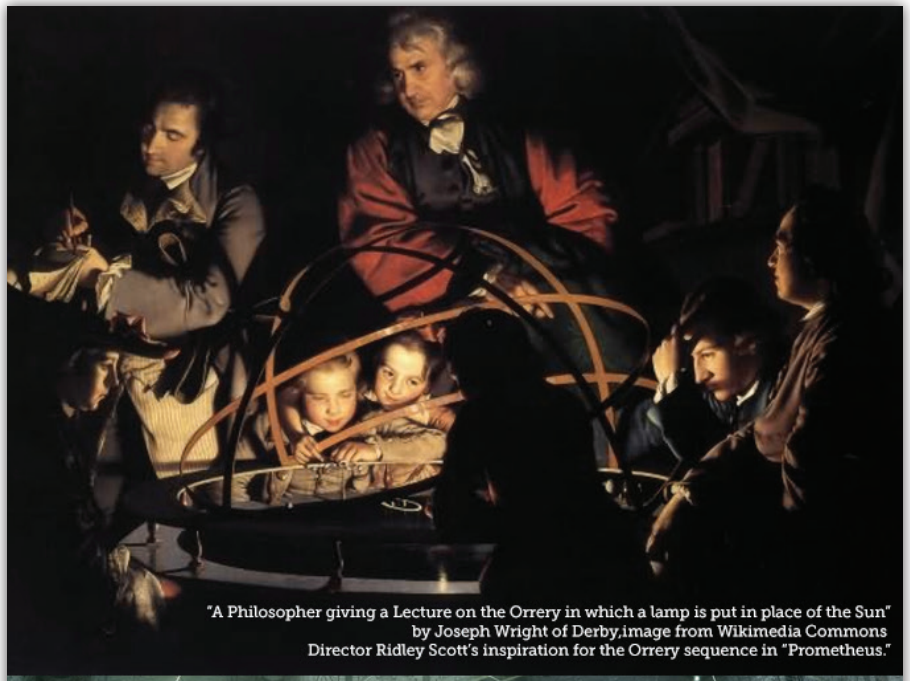
The impact of the camera obscura continues today. Its projection of realistic images of the world into a controlled space has profoundly influenced the role and representation of holograms and information displays as they are portrayed in popular media.

Here we see images from a key narrative sequence from the film *Prometheus* (2012). A character stands in the middle of a sophisticated alien planetarium/database, navigating it by three-dimensional gesture and touch.



Critical Visualization Concepts

4.0.0 Background



"A Philosopher giving a Lecture on the Orrery in which a lamp is put in place of the Sun"
by Joseph Wright of Derby,image from Wikimedia Commons
Director Ridley Scott's inspiration for the Orrery sequence in "Prometheus."

Production design painting for Orrery sequence in "Prometheus."
Image from Vyle Art.com

The visual effects artists were given free reign to interpret director Ridley Scott's idea for an alien observatory which was itself inspired by a painting: *A Philosopher giving a Lecture on the Orrery* (Joseph Wright of Derby, 1776). A pre-production painting from *Prometheus* is shown beneath it.

The original painting and the final sequence from the film are linked by the concept of revealing knowledge. In the painting the philosopher is lecturing about the solar system and using a lamp to represent the sun. In *Prometheus* the audience witnesses the character (in the central position of a sun) coming into a greater understanding about the relationship between Earth and an ancient alien civilization. The idea of standing inside knowledge instead of outside of it is, at its base, a matter of turning the reality that the camera obscura projects inside out.

Critical Visualization Concepts

4.0.0 Background

EXAMPLE 4.2 (ACO 1.3, 2.2, 3.1): The Descendants Part 2

If the immersive star map of *Prometheus* is an inside-out camera obscura that surrounds its user, then the fictional heads up display (HUD) used by Iron Man in *The Avengers* (2012) is like a custom-made suit. In these ground breaking visual effects sequences the viewer is positioned like a fly on the inside of Iron Man's helmet, treated to a view of the character and the data displays that he uses to navigate and fight. Significantly, the audience is expected to process the same data that Iron Man is, shifting the relationship with the hero to an even deeper level: we know what he knows!

Every rendered moment of the HUD reflects a story point, meaning that every animation the viewer sees reflects something that is going on in the film. Though "looking cool" is incredibly important to the designers, these are not simply loops of random numbers and spinning geometric figures. The graphs, gauges, read-outs, and models all reflect the situation the character is in. Such fastidious dedication to cinematic realism invites close scrutiny and repeated viewing–the artists know that some people (in the "*camera obscuras*" of their living rooms) will pause their Blu-Ray players and study every single frame for consistency. To support this new viewing habit–this new way of gaining knowledge–worlds of fiction have become just as feature rich (and interactive) as the natural world.

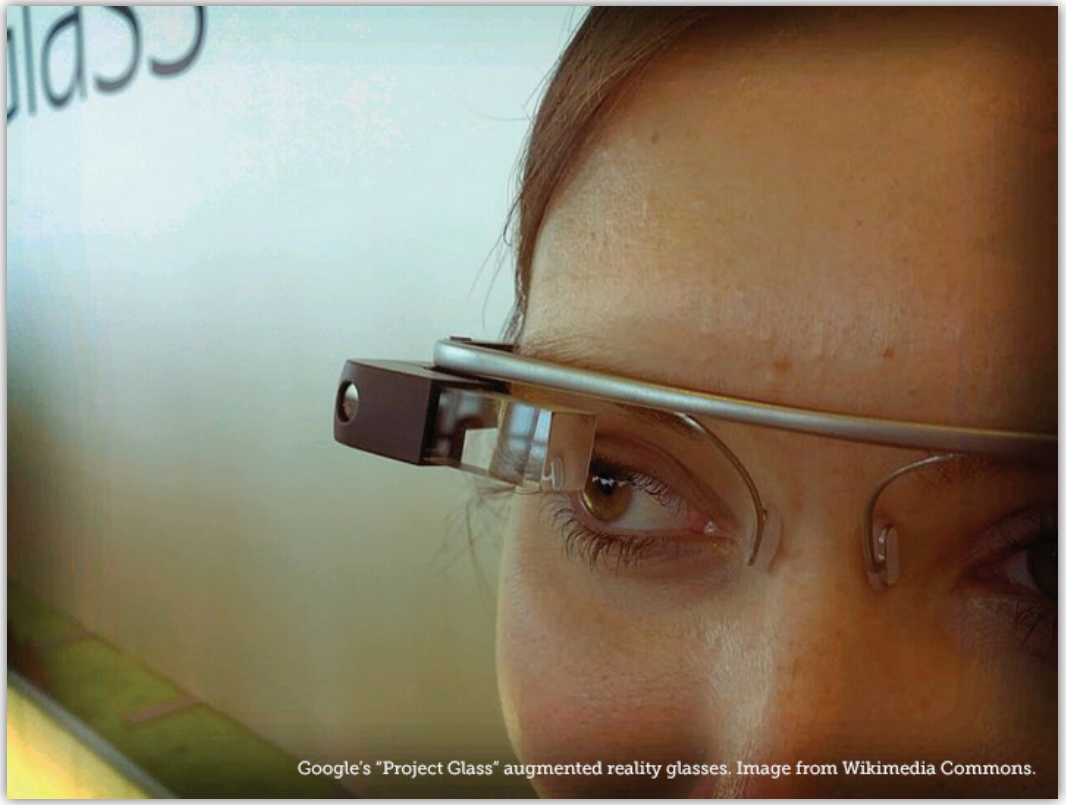
Critical Visualization Concepts

4.0.0 Background

EXAMPLE 4.3 (ACO 2.2, 2.3): The Descendants Part 3

The transformation of the camera obscura does not start or stop in Hollywood. The military has had a long history of experimenting with heads up displays, especially for fighter pilots who must make split second decisions under extremely difficult cognitive and physiological conditions. Google has decided to jump this technology straight into mainstream culture with "Google Glass," an early experiment in mainstream wearable computing.

In the near future Google hopes to create a world of universally accessible information that is not dependent on desktop computers, laptops or mobile phones. Google's engineers and designers want to see reality augmented in the human eye itself, and Glass is at this point the next closest thing. The promotional image to the right shows a prototype pair of Google's magic glasses. The video (YouTube: http://goo.gl/I2xE0) fleshes out the story from the perspective of someone wearing them. Though this certainly isn't Iron Man's HUD, the underlying principles of data-driven visual communication are exactly the same. Through Google Glass the walls of the camera obscura have become transparent but no less present, and the images that are projected through invisible pinholes reflect clouds of data, not water droplets.



Google's "Project Glass" augmented reality glasses. Image from Wikimedia Commons.

Critical Visualization Concepts

4.1.0 Introduction

4.1.0 Introduction

As everyday life becomes ever-more data rich, and this data is in turn visualized, life becomes ever-more cinematic. The modern individual's camera-eye moves through artificially-constructed landscapes of communication. We move in relation to GPS navigators, location-based smartphone services, digital personal assistants, and search engine queries. Recording what we perceive through memory and increasingly powerful electronic devices, we process and are processed by our environments. Our organic field of view is a movie amplified by a layer of problem-solving technology that changes what and how things are seen. The layering of data over sight, exemplified by Google's "Project Glass," is analogous to the production of cinematic visual effects.

Creativity Academies does not consider this a crisis, because today's students are indigenous to this world. Contemporary visual effects (VFX) are expressions of knowledge and critical thinking. They don't just solve the immediate problems of blowing up the Golden Gate Bridge, making chipmunks breakdance, animating the fluid and accurate deconstruction of a vehicle engine, or turning New York's Times Square into a post-apocalyptic wasteland. For VFX to serve the narrative at the level of visual fidelity that the audience expects, their designers leverage tools based on the physics of light, optics, atmospherics, fluid dynamics, statics and dynamics.

The collapse of the bridge, the movement of fur on a spinning body, the accurate disassembly of an engine, and the decay of an urban landscape all require a working knowledge of applied physics, chemical reaction, dynamic systems, and ecology. The resulting visual sequences are presented with an intensity of stylization that often transcends the narratives they serve.

VFX designers are not scientists, but their field uses science in the service of selling the narrative moment. Knowing how and when to do so is an emerging art.

Visual effects (and their audio equivalents) have propagated through all forms of visual communication, changing the way that we digest messages, altering how we see the world, and exaggerating our expectations of reality. The CA concept of Critical Visualization is a generalization of theories and practical VFX-based approaches applied to problems of communication arts.

Critical Visualization is not a theory of cinema, but a reaction to cinema's influence on everyday life.

EXAMPLE 4.4: Layers and Tools

The majority of 2D, 3D and time-based production software packages incorporate a layer-based model for the integration of visual elements. Whether used as an asset-organizing strategy, a way to design interactivity, or a way to simulate depth of field and distance, a cinematic visual strategy underlies the majority of digital production.

Turning our attention to the increasingly dynamic and realistic effects, virtual camera control, lighting, and animation systems available in modern production software, we see an even deeper engagement with the cinematic simulation of reality.

2D programs now integrate 3D modeling and rendering engines, and 3D programs integrate 2D visuals for textures and backgrounds. The time-based programs used to produce interstitials, flying logos and title sequences all effectively integrate 2D content in 3D development spaces. Even the bulk of print matter is created as part of an overall design strategy that anticipates being translated, "brought to life," or otherwise enhanced in the dynamic digital presentation spaces of tablets, television screens and web browsers.

Critical Visualization Concepts

4.1.1 Problem Definition And Analysis

Communication is deployed along a spectrum of pace and interactivity that ranges from physically turning pages to flying through a virtual 3D environment. From remote control to point-and-click to using touch-based interfaces, modern communication presents us with a composite made of multiple layers of visual elements and meanings.

Even though the consumer still treats a magazine layout as a static object, and a backlit sign as something separate from a building's architecture, both of these examples of communication are the product of layering and compositing. Both have the goal of immersing viewers in the content, and making them part of an ongoing story.

The techniques that VFX creators have at their disposal are messages unto themselves–as media theorist Marshall McLuhan said: "The medium is the message." Because they are "so cool" and are able to realistically depict light and motion, VFX have come to represent style's triumph over and emancipation from narrative.

Critical Visualization breaks down into four phases:

1. Problem Definition and Analysis
2. Depth Definition and Analysis
3. (De-) Compositing
4. Critique and Rendering

4.1.1 Problem Definition And Analysis

Critical Visualization begins with the following assumptions:

1| The communications problem is a "shot," or chunk of cinematic time whose message is connotative and denotative (see Chapter 5: The Communications Landscape, particularly section 5.1.3). The successful production of the shot means just as much if not more than the story that it serves. For example, the production detail in the visualization and animation of Iron Man's heads up display (see above) is so meticulous that it might as well be "real," and this effect not only supplements the narrative but has its own level of meaning. Put another way: the fact that we can synthesize photorealistic graphics has a meaning that is always independent of the content of the graphics themselves.

2| The "shot" could be a web page, magazine spread, video game map, flyer, etc. Therefore the term "shot" is interchangeable with "page," "frame," "screen," and "viewport." This reflects the convergence and generalization of the digital field of view: everything is becoming a screen onto, or from which, reality is projected.

3| The problem of the shot can be solved through VFX's tactics of simulation, enhancement and extension. Examples include adding an alien fleet to the skies above a city, creating new buildings for that city, erasing blemishes, stunt wires or unwanted scenery, manipulating the relationships between text and image, and altering the lighting conditions in an image.

4| That VFX techniques present the best solution to the problem the shot poses. Not all communications problems, for example traditional typesetting for a book, a newspaper layout, or the design of a bureaucratic form, are necessarily appropriate contexts for critical visualization.

5| That the fundamental problem of the shot is one of style, not narrative. That the story calls for a hologram or a sky full of UFOs

Critical Visualization Concepts

4.1.1 Problem Definition and Analysis

is secondary to the infinite stylistic options that are at the artist's disposal. See the "The Descendants Part 1" above.

Critical visualization is a strategy for approaching design problems in terms of the technical and aesthetic deconstruction of style. Without critical visualization Professional Communicators can only select what is "cool" rather than understanding how "cool" is researched and engineered.

Professional Communicators must gain an intimate understanding of style in order to cut through clutter with their messages.

Creativity Academies distills the variables (ingredients) of cinematic visual style into the following points:

• Position of visual elements in relation to the eye and each other. Position refers to the relative locations of visual elements in the frame, not only in terms of shared planes (the X-Y axes) but also how they might be stacked along the Z-axis of depth. *Some variables (design principles) related to position are scale, proportion, balance, variety and repetition.*

• Framing of visual elements. Framing refers to the way that the apparent size, scale or magnification of a visual element is intended to produce a reaction in the viewer. It also refers to the position of the element relative to the center of the shot's frame. *Some variables (design principles) related to framing are unity, balance, harmony, and variety.*

• Lighting of visual elements. Lighting refers to the role that color, shadows, reflections, visibility and transparency play in the presentation of a visual element. *Some variables (design principles) related to lighting are unity, contrast, and emphasis.*

• Order and pace of presentation. Order refers to the sequential or spatial emphasis that a designer places on position, lighting, and framing. The way that visual elements are ordered in the frame is the solution to the shot's problem. Order and pace also includes motion of visual elements in relation to the eye and each other. *Some variables (design principles) related to order are emphasis, balance, harmony and contrast.*

Though Professional Communicators have developed various rules of thumb, templates, patterns, and formulas for working with position, framing, lighting and order there is no such thing as a universal solution. Just as problems of communication are contingent, so are the solutions.

EXERCISE 4.1 (ACO 5.1): Immersion and analysis

1 | Imagine you are standing in a popular shopping mall (or visit one). The frame is whatever you see, broken up into many smaller frames in the form of signs, display windows, and even glimpses of other parts of the mall in the distance.

2 | Study the cover of a favorite magazine. Like the mall, it too is broken up into smaller frames that contain information and imagery.

Continues...

Critical Visualization Concepts

4.1.2 Problem Definition and Analysis–Light And Optics

For both examples document the following:

a| Exactly what you see (be exhaustive).

b| The way that elements in the frame relate to each other in terms of size and location.

c| How lighting is used to emphasize different elements.

d| How observations a-c affects the order in which the frame's elements are perceived.

e| Discuss the differences and similarities between the mall and the magazine cover.

The actual mechanics of depth analysis are rooted in the actual physics of light interacting with lenses and objects at various distances. If light represents knowledge, then the specifics of its behavior in an optical system correspond to the details that make the representation meaningful.

EXAMPLE 4.5: Watch yourself

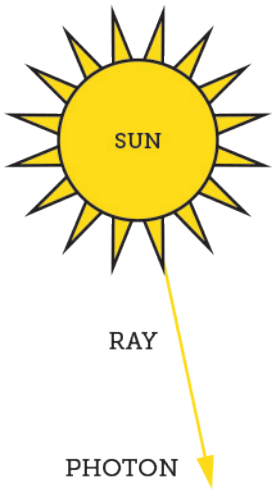
Look at a light source across the room, preferably a point source like a light bulb. Hold up your finger at roughly arms length and focus on it. Notice that the background becomes blurry. Now focus on the lights behind your finger. You will see a doubled, blurry image of your finger. All discussion of light, focus, and depth of field to follow is based on this fundamental visual experience.

4.1.2 Light And Optics

Moving from an analysis of complete visual frames and the ways in which their elements relate to each other, we now look at the actual medium of the frame itself: light.

As discussed above, light has deep symbolic meaning in relation to knowledge, wisdom and understanding. Terms like "enlightenment" and "revelation" both evoke a dispelling of uncertainty (darkness) in favor of clarity and precision.

Commercial communication strives to achieve a level of aesthetic and emotional impact that matches these deeper relationships with light.

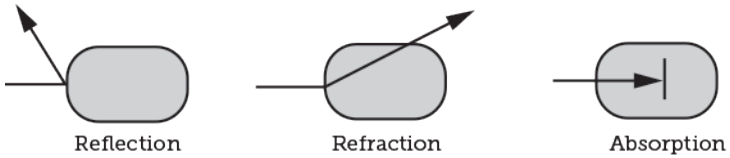


It all starts with the sun, whose light and gravity makes all human life and technology possible.

We call individual "packets" of light PHOTONS, and a series of photons a RAY.

At the human scale a light ray travels in a straight line at about 186,282 miles per second.

A light ray that interacts with matter can have its direction changed or it can be absorbed. If the ray does not penetrate matter, the change of direction is called reflection; if it does, the change of direction is called refraction. In both cases, very little of the light's energy is lost. A ray that does not penetrate matter is absorbed, and its energy is converted into another form.



Critical Visualization Concepts

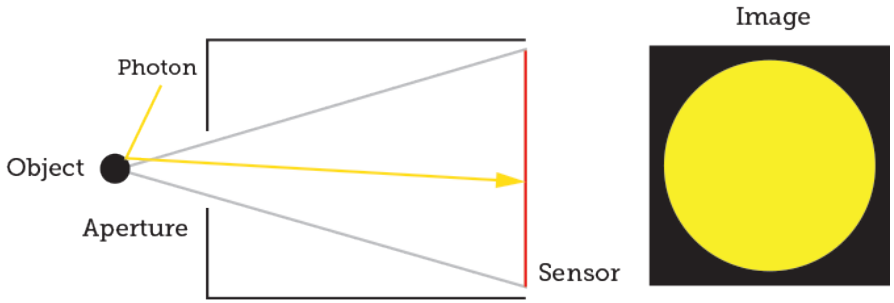
4.1.2 Problem Definition and Analysis–Light And Optics

See *Chapter 1: Communication, Space and Energy* for a more detailed discussion of the analogy between light and communication, especially *Section 1.2*.

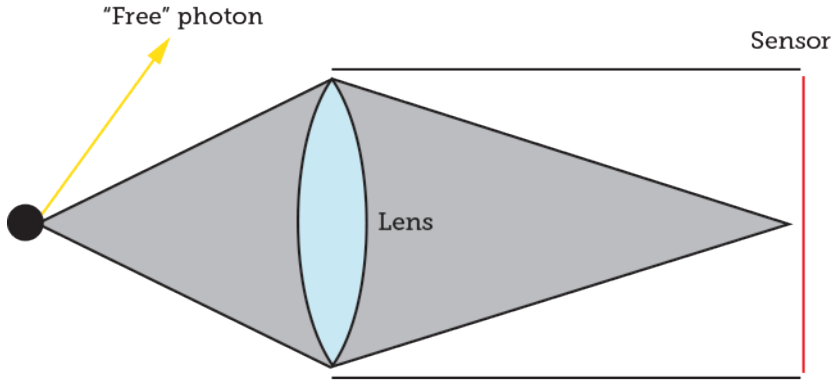
COLOR is the medium that light rays carry to the human eye, which is amazingly sensitive to its subtleties and gradations. All visual instances of shadow, texture, and reflectivity are based on different angles and intensities of light's reflection and refraction.

Above is a representation of the SPECTRUM of visible light. The vibration rate of a light ray determines how we perceive its color. Red on the left is the lowest frequency humans can see. Violet on the right is the highest.

Below is a schematic for what is known as a pinhole camera, which captures only the light that comes through the APERTURE in front of the SENSOR. An image is produced by those photons that happen to enter the sensor.



In the following schematic, the simple camera is improved by adding a LENS that FOCUSES the incoming light rays directly onto the sensor.



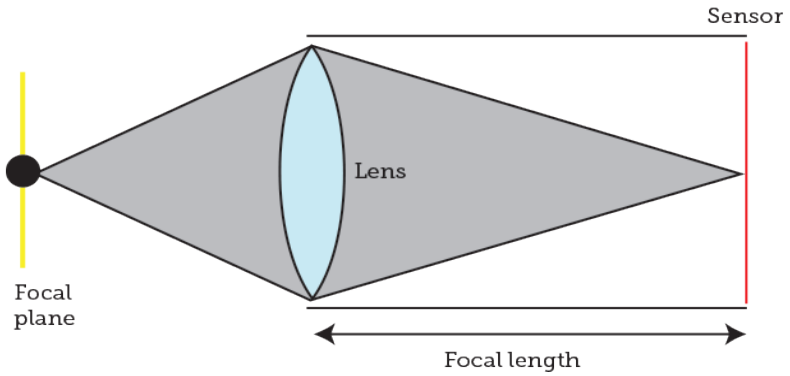
The gray diamond shape created by the lines connecting the object (circle), the top and bottom of the lens and the sensor represents ALL POSSIBLE LIGHT that the lens can refract from the object.

Naturally, not all photons hit the camera lens, and this is why there are always limits to the types of images we can create, the most important being the creation of the viewing frame itself.

The following diagram represents a "perfect" relationship between the object, the lens and the sensor: the yellow object is IN FOCUS. The distance between the lens and the sensor is called the FOCAL LENGTH, and the area of space where the object is located is called the FOCAL PLANE. All objects on the focal plane, positioned on the yellow line, are in focus.

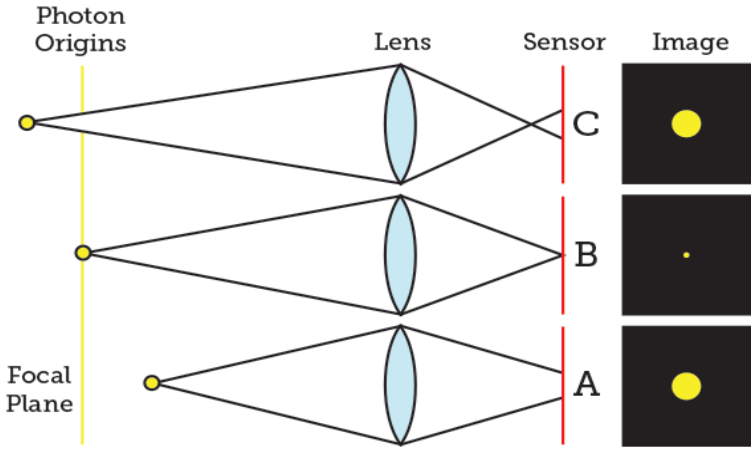
Critical Visualization Concepts

4.1.2 Problem Definition and Analysis–Light And Optics



But what happens when objects are closer to the lens or farther from the lens?

In this schematic, photons that do not originate from the focal plane will not be focused on the sensor.



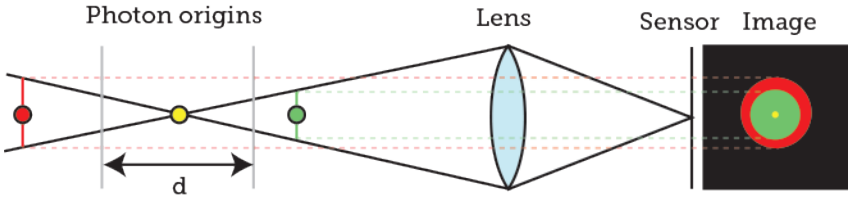
Photons coming from beyond the focal plane will be focused in front of the sensor (scenario C) while those in front of the focal plane will be focused behind it (scenario A).

Photons arriving in scenarios A and C are OUT OF FOCUS, and will produce a blurry circle on the sensor known as a "circle of confusion."

Explore this Google image search (http://goo.gl/e9DPy) for examples of circles of confusion.

How then do we change the focus of an image? Note that the images produced in different scenarios are based on two factors: 1) the distance between the photon's origin and the lens, and 2) the focal length of the lens. Adjusting the focal length in A and C would bring the photons into focus, and so would bringing the photons in A and C closer to the focal plane.

This second option introduces the concept of DEPTH OF FIELD and how changing it affects the composition of the resulting image.

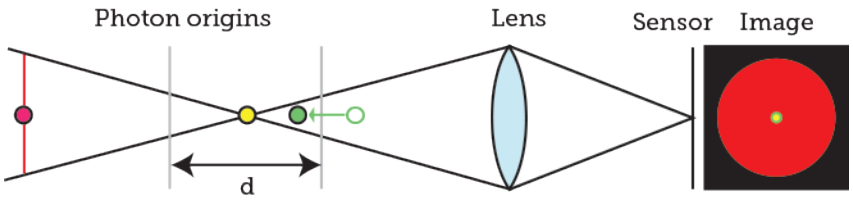


The distance "d" is the DEPTH OF FIELD. Photons refracted onto the sensor that originate in this part of space will produce acceptably

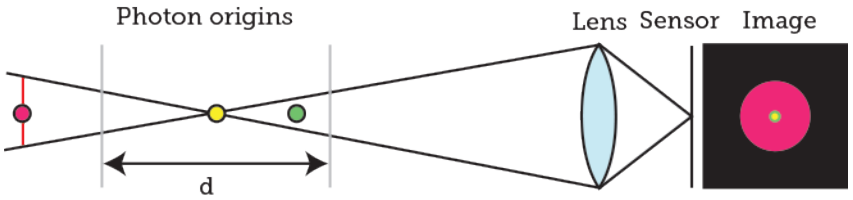
sharp images. We say "acceptably" because the eye cannot distinguish the minute differences in blurriness in the range of positions within "d."

So how do we bring multiple points into focus?

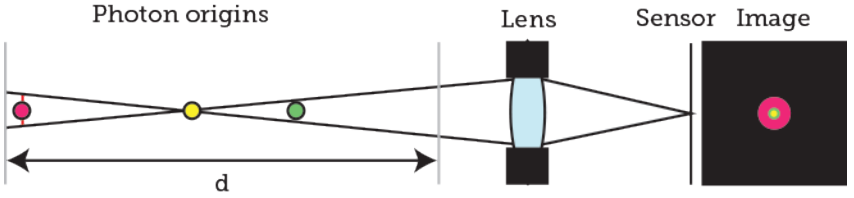
One way to adjust the depth of field is to move the camera or the objects so that photons from the green point emerge from within area "d." Note the increased size of the blurred photons coming from the red spot.



Another way to increase the depth of field is to change the distance between the lens and the sensor, which decreases the FOCAL LENGTH and "squashes" the angles of the depth of field coming from the yellow point so that "d" is wide enough to include the green point.



The last way to adjust the depth of field is to change the amount of light that is refracted through the lens. The smaller the aperture, the wider the depth of field.



4.1.3 Depth Of Field And Focus

Various depth of field examples: http://goo.gl/EpXgS.

In actual photographic or cinematic moments, the depth of field is used to direct the viewer's attention to specific parts and planes of the frame. Each example is characterized by an area of the frame that is in sharp focus and an area that is blurry or out of focus.

We experience depth of field through binocular vision. The brain integrates the two slightly different images of reality that arrive in each of eye via a flood of photons. Because the eyes have a limited range of motion for focusing, there is always a "sweet" spot in which objects appear as sharp as possible.

The "sweet spot" is the part of the visual field that garners the most attention. Light is the bearer of meaning and significance, and this is where the viewer seeks critical content, be it food, a threat, a mate, or a distraction. Visual communication is based on this core physiological feature of perception, and the Professional Communicator is a "focus engineer."

Critical Visualization Concepts

4.2.0 Depth Analysis

Today we create photorealistic images without actual light. Modeling and lighting software is used to create scenes that exist only in the computer, and they are brought to life as interactive media and 3D video experiences. A large part of what makes them believable is their implementation of the optical rules explored in the previous section.

Unless we are considering the design of a physical space such as a retail environment or an art installation, the majority of visual communication is reduced to two dimensions enriched with a wide variety of depth, lighting and textural cues. See P*roduction Exercise 1.5: Space and Gestalt Theory* for an exploration of perception and communication.

4.2.1 Virtual Depth Of Field

This practice of simulating the impressions the universe makes on the naked eye began in painting with careful study of light's interaction with objects, textures and the atmosphere itself (See *Chapter 2: Art and Design*, particularly Section 2.1 for more information). Today we make use of a host of mathematical models for light's interaction with matter, which are applied to various visual communications scenarios. The general production trend is toward photorealism coupled with the increased resolution of display systems. Both aim to deeply engage the eye and immerse the imagination.

In critical visualization, analyzing the layers in a visual frame sets up the overall structure for solving or reverse engineering the shot's problem. Because the visual frame is not a real window beyond which exist actual objects with real distances and physical characteristics, visual communication always involves a basic element of trickery whose roots go back to all the illusions artists developed to make the sets used in a play, opera or movie effective.

The implied depth of a shot creates a space for prioritizing what is seen and the reactions that it generates. Being able to deconstruct a shot into its layers and elements is the key to understanding it. **To create a compelling frame requires thought, and so does analyzing one.**

Cinema taught us to think of things "in the background" as being less important than things in the foreground, but only because cinematographers carefully decide what to include and exclude from said background. In the end, a successful shot presents itself as a unity or whole, integrating foreground and background in a back-and-forth dialog of believability that not only drives the narrative forward (solves the shot's problem), but stands alone as an instance of separate meaning.

EXAMPLE 4.6 (ACO 2.1, 3.3):

1 | Classic (Analog) Disneyland

The backgrounds of the rides and the parks are all "fake" in that they are built with all the expertise and subterfuge that the Hollywood set-making profession can muster. The sets provide a sense of total immersion for park visitors, enhancing interactions with costumed characters, and the narrative experience of the ride. By investing heavily in set designs, Disneyland draws visitors into the park's various stories, and this not only entertains but makes waiting in line far more tolerable. The park visitor literally occupies one layer in a 360˚ bubble of a set. (Explore: http://en.wikipedia.org/wiki/Forced_perspective).

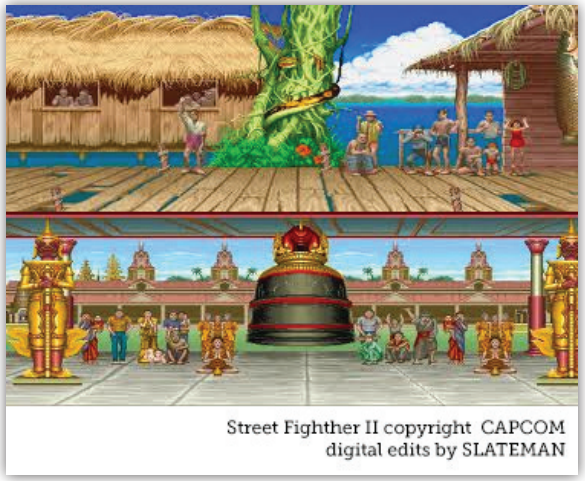
Critical Visualization Concepts

4.2.1 Depth Analysis–Virtual Depth of Field

2 | *2001: A Space Odyssey* (1968)

This classic science fiction film begins with a story of man's evolution on the plains of Africa. Director Stanley Kubrick sent a photographer to Kenya to scout locations. Faced with the technical and budgetary constraints, the scenes were shot on a sound stage instead. Presented with large-scale rear-projections, audience members could not distinguish huge backlit landscape photographs from what they imagined the real time and place would look like. In the sample image the layers are created by the set and actors in the foreground of the frame and the projected photograph in the background.

3 | Street Fighter



Part of the evolutionary history of the "2D fighter" video game genre involves the increase in detail and animation used to create the locales that the players confront each other in. Originally they were static digital paintings of temple grounds, subterranean caverns, air force bases, crowded streets, and the like. As computing technology got better, designers were able to animate fight spectators, animals, passing vehicles and landscape elements such as waterfalls. Significantly, as compelling and evocative as these backgrounds became, they were perfectly balanced and did not distract players from the actual control and interaction of their avatars in the foreground.

4 | Bullet Time

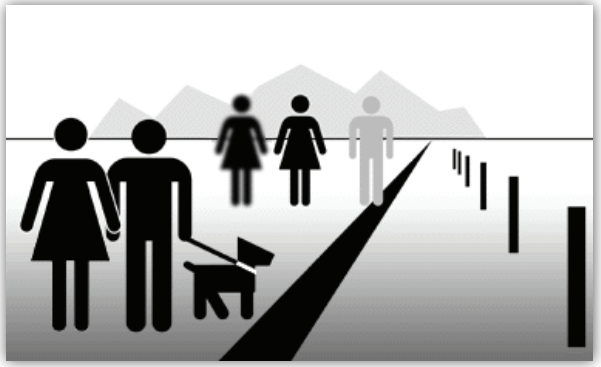
In *The Matrix* (1999) visual effects artist John Gaeta brought the ability to put a camera anywhere in a 3D computer-generated scene (originally developed by architects and computer-aided design engineers) to Hollywood. Gaeta called this "virtual cinema" because filmmakers were no longer restricted to using images based on actual light captured by a camera on a set. In a famous sequence, protagonist Neo dodges a series of bullets, proving to himself that he can conquer the synthetic prison that is the film's premise. To solve the problem of the shot, the VFX team had to build a virtual reality, on some level contradicting the critique in the film's narrative.

Captured against a green screen by an arc of cameras that take a series of pictures from different angles, actor Keanu Reeves was digitized and then reconstructed in the computer. His model was combined with a

background built from photographs of the rooftop where the action takes place. With these two data sets, the filmmakers were able to effectively position their virtual camera anywhere, eventually designing a fluid, first person slow motion path that weaves between the bullets and their visible concentric shock waves.

Here we find a culminating synthesis of Disneyland's immersion, Kubrick's photorealistic backgrounds and the video game developer's aesthetic of interactivity. The technology developed to solve this narrative problem would end up applied beyond cinema. Bullet time would show up in television commercials, video games and be referenced in cartoons. There are now companies that can set up bullet time rigs at weddings and parties.

4.2.2 Depth Cues



Overlapping objects, relative differences in their size, the nature of the shadows they cast and their colors all contribute to the perception of depth.

This image search for the term "depth cue" (http://goo.gl/PjErZ) yields a comprehensive visual summary of perspective effects and all the tricks used to communicate depth where there is none.

One need look no further than the title sequence of any contemporary Hollywood action film to see how the manipulation of depth cues draws viewers into the narrative. As the camera flies inches above the magnified textures of the hero's logo, zips between fantastic planetary systems, zooms along neuronal pathways or performs radical shifts of focus, the viewers are being primed for the subsequent cinematic experience.

Though the title sequence is intended to establish the theme or tone of the film, it communicates absolutely nothing about its actual quality. Depth cues are used to communicate meaning on a level separate from the narrative.

The cinematic genre known as film noir ("noir" means "black" in French) is perhaps the most famous example of this practice. These crime stories featured hard-boiled detectives and beautiful dangerous women set against urban social backdrops of corruption and uncertainty. Beyond plots of vengeance and deception, their visual style communicated just as much about the world the characters inhabited as the narratives themselves.

This image search (http://goo.gl/9iVZD) shows the strongest trends of the film noir genre.

Critical Visualization Concepts

4.2.2 Depth Analysis–Depth Cues

Film noir uses high contrast lighting structured by geometric patterns, long perspective shots of city streets (that were often paintings or sets), dramatic silhouettes, tightly-focused lighting, and compelling tricks of scale and contrast that flattened the foreground and background. Perhaps the most famous style of noir image features the huge shadow of an armed man, or a woman's silhouette projected on a wall, with the hero fully lit in the foreground.

Photo: Jim Ferreira

Film noir exaggerated and amplified the simple depth cues animated in this video (http://vimeo.com/34880703) to create mental spaces that have influenced many other areas of visual communication.

Contemporary films like *The Matrix* (1999) relied heavily on noir visual styles to tell stories. In *The Matrix*, humans are slaves to consciousness-controlling computers and menacing "agents." The long-term effects of runaway communications technology replace the classical noir themes of urban and political corruption. The characters' fashions are also inspired by the original genre's era, while noir camera angles, perspective shifts, tones and lighting techniques are used throughout.

The migration and adaptation of film noir's styles to other films is tracked at this web site: http://goo.gl/V9S9D.

PRODUCTION EXERCISES

"FILM NOIR/GREEN"
4.2.2 Depth Analysis Depth Cues
Adobe Photoshop
ACO 3.1

1 | Create a film noir style frame out of regular images. To do so you will primarily be adjusting the color levels in these images and extracting figures for resizing and positioning.

DOWNLOAD:
creativityacademies.com/4.2.2-01.pdf

"TIMES SQUARE TIKI"
4.2.1 Depth Analysis
Adobe Photoshop
ACO 3.1

1 | Explore depth of field by simulating it with layers, blur filters and transformations of scale and position. Investigate how changes in the depth of field direct the viewer's attention, and affects interpretation of the image.

DOWNLOAD:
creativityacademies.com/4.2.1-01.pdf

Critical Visualization Concepts

4.2.3 Depth Analysis–Focus as Narrative

EXAMPLE 4.7: Interface Design

In this example, depth cues are used to show different choices in a web interface. The text that is in focus indicates the current topic.

EXAMPLE 4.8: Video Games

This still from the video game *Flow* shows how depth of field is used to indicate which layer the player is actively exploring. Action moves forward and backward onto different focal planes: the deeper into the screen you go, the harder the game gets.

4.2.3 Focus As Narrative

Though focus is a physical property of optical systems, it is so deeply embedded in our communications landscape that it has taken on narrative meaning. Focus is also a means of telling a story. Whether looking at a photograph, watching a movie, or manipulating a user interface, focus tells us what to look at and therefore what to follow. As discussed earlier, the relationship between background and foreground (and any layers in between) is a constant dialog.

A shot featuring a shallow depth of field makes the context of what is in focus mysterious. With a deep field of focus, everything is legible and visible, and information pours out of the frame to be interpreted. The relationship between what is in and out of focus works at the practical level of design, and the philosophical level of how entire societies circulate their messages.

Critical Visualization Concepts

4.2.3 Depth Analysis–Focus as Narrative

Section 1.4.2 of Chapter 1: Communication, Space, And Energy presents a thorough discussion of the four types of space that encompass modern communications. The table below documents the relationship between depth analysis and these spaces.

	PHYSICAL	SOCIAL	COMMUNICATION	MENTAL
LIGHT	Photons emitted from natural or artificial sources.	The task, action, ritual, or procedure that the social entity is trying to achieve. The rules or traditions governing social interaction between entities.	The medium in a channel; the conceptual or material components of a sign.	Knowledge or understanding when it is absorbed or transmitted.
DEPTH OF FIELD	The "sweet spot" in an optical relationship between an object and a camera where the object is in acceptable focus.	The "sweet spot" between two or more social entities where the expectations are shared and the rules of interaction are clear and unambiguous.	The point where a sign's material and conceptual components are most effective. The demographic range that is most receptive to a message. The balance between repetition and duration.	The "sweet spot" where ideas are most focused and easily communicable: or where communication can effectively alter a mental state.
DEPTH CUES	Receding lines, relative differences in scale and focus, overlaps, atmospheric colors.	Relative differences between two subjects, according to, for example: fashion, skin color, hairstyle, neighborhood, taste in music, language/accent.	In terms of competing channels or messages, depth cues are relative differences in intensity that result in some being better at carrying messages or getting attention than others.	The ordered relationship between ideas or concepts, organized by time, hierarchy, category, etc. In all cases a relative order emerges when considering an organization of ideas or concepts.
FOCUS	The distance relationship between a lens and a sensor that produces the clearest possible image in an optical system.	The individual or entity in a social relationship that is given the greatest emphasis in a task, action, ritual, procedure or tradition.	The part of a message that is given the greatest emphasis.	Attention directed toward a specific reaction to communication.

Critical Visualization Concepts

4.3.0 (De-) Compositing

4.3.0 (De-) Compositing

Scan this image search result for "compositing" (http://goo.gl/AGJbG).

Compositing is the technical and fine art of integrating different layers of imagery into a seamless visual unity. By seamless we mean that the combination of all elements produces a coherent experience of visual unity–the composition "makes sense." Decompositing is the analysis of this unity, the breakdown of its component elements.

Compositing can be pursued through two major strategies: 1) positive blending which seeks to create naturalistic compositions even if the elements are sampled from a diversity of sources; and 2) conflicting blending which exploits the attention-getting functions of collage, high contrast and intentional juxtaposition, especially when the composite's elements are sampled from various sources.

Critical Visualization promotes the practice of seeing the compositions "sideways," that is, separated into the layers that add up to the final image. Significantly, each layer of the composite has its own independent capacity to communicate; each has its own message. Compositing balances the technical and aesthetic steps required to combine visual elements with the conceptual steps that pay close attention to how the meaning of each element contributes to solving the problem of the shot.

Convergence of image-making systems and techniques that were once separated into different production processes has come to characterize digital communications tools. Thanks to shrinking hardware form factors, increasing resolution, real-time processing by production software, and the ubiquitous network cloud for storage, promotion and distribution of content, the distinctions between pre-visualization, shooting, post-production and distribution are collapsing. To make from *Avatar* (2009), director James Cameron used virtual sets that were rendered in-camera in real time. Physical and visual effects for fire, smoke, water, and camera lens effects are all applied to video game scenes in real time as well. The typical smartphone has audio and video editing capabilities that were once impossible on consumers' desktop machines a decade ago.

All visual effects shots are broken down into the same component parts: the elements of the shot that propel the narrative, the plate(s) that provide narrative context, and any effects that enhance the delivery of the previous two components.

Shot elements include props, set pieces, actors, vehicles or buildings that may be real or computer-generated. In some cases, things like fire, explosions, or even text (as in the 2009 film *Zombieland*) may play the role of elements if they are focal points of the message being delivered by the shot.

Plates are the background images with which various elements are composited to complete the shot. Plates can be actual film or video footage, matte paintings (digital or analog), or computer-generated sets that are integrated via green screen. Plates define the overall context for the shot and may not necessarily be produced by the same individuals working on the rest of the composite.

Effects enhance the impact of the shot, and include ambient smoke, motion blur effects, glows, focus changes and color adjustments. They are added to the shot to complete the message, usually in the service of providing additional degrees of realism which in turn deepen emotional engagement.

Critical Visualization Concepts

4.3.0 (De-) Compositing

The breakdown of visual effects shots is not only important for those who want to learn how they are constructed, but also for those who want some insight into how the reality of the general communications landscape is evolving. Increasingly, the techniques, approaches and philosophies of visual effects production influence the basic approaches to design for all forms of visual communication.

For an ever-evolving exploration, search for "VFX shot breakdown" followed by the name of any movie. The breakdown panel to the right features Life of Pi (2012).

EXAMPLE 4.9: Life of Pi VFX Breakdown

The 2012 film *Life of Pi* features what is arguably one of the most emotional sequences of computer-generated imagery created to date. In this VFX breakdown from the production studio BUF we see many of the steps that the artists went through to create the film's underwater dream sequence. Significantly we are shown the traditional artistic techniques (watercolor in particular) that inspired the particle-based effects. That emotional impact of the sequence lost during the dissection is significant because the viewer is invited to understand and *interpret* each visual technique and expression on its own terms.

WATCH: http://vimeo.com/60239413

Critical Visualization Concepts

4.3.0 (De-) Compositing

EXAMPLE 4.10 (ACO 1.3, 2.1): Alien Landscapes

We return to *Prometheus* as a critical visualization case study not only because it represents state-of-the-art visual effects, but because of the extensive arts-driven focus that was put into creating things like the landscape, architecture and user interfaces that serve as characters in and of themselves.

Designs for the planet that the scientists explore were inspired by samples of Iceland's landscapes. The solution united real and computer generated topology, techniques derived from traditional painting, atmospheric simulation and a variety of compositing tools.

This image shows an original photographic plate featuring a real vehicle and a section of roadway integrated with a computer generated wireframe landscape. At this stage of solution, artists can see how issues of scale and unity will come together to complete the shot.

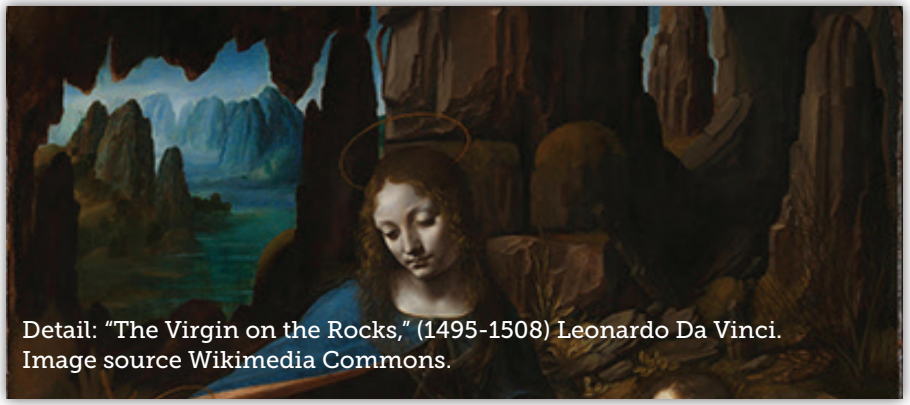
This image shows the landscape after a preliminary render that gives artists a sense of how virtual light will interact with the scene. Here they are matching the synthetic light on the rock walls and mound with the actual light striking the vehicle in the foreground.

In the finished render textures have been added to all geographic features, the sky has been added, along with clouds, mist and dust. Atmospheric effects increase the depth of the frame with a technique related to an old trick discovered by Leonardo Da Vinci: "If one is to be five times as distant, make it five times bluer."

Critical Visualization Concepts

4.3.0 (De-) Compositing

Here Da Vinci is referring to a painter's rule of thumb that renders close-up objects in colors that are as true to life as possible, and distant objects with a tint of blue that intensifies with distance. "The Virgin of the Rocks" (below) illustrates this principle and another that makes distant objects blurrier than close-up ones.



Detail: "The Virgin on the Rocks," (1495-1508) Leonardo Da Vinci. Image source Wikimedia Commons.

For Creativity Academies, the integration of VFX shot elements such as land, action and nature stands in for general aspects of modern communication. Every message is a composite of real elements, data and fantasy. The term "communications landscape" bridges the oldest artistic traditions with the most cutting-edge visualization strategies.

4.3.1 The Four Layers of a Critical Visualization Composite

A Critical Visualization Composite (CVC) is made up of four layers: the Conceptual, the Narrative, the Aesthetic and the Technical. Each of these layers represents a set of design decisions that the communicator will assemble to deliver the intended message. Though presented here as an abstraction, these layers reflect the actual power, function and application of converging digital production tools.

If the CVC were used to break down a movie the four layers might separate as follows:

The AESTHETIC LAYER would be handled by the production designers, costumers, directors of photography, set dressers, editors, sound designers, and special and visual effects designers.

The NARRATIVE LAYER would be handled by scriptwriters, directors and actors.

The CONCEPTUAL LAYER would be handled by producers, directors and actors.

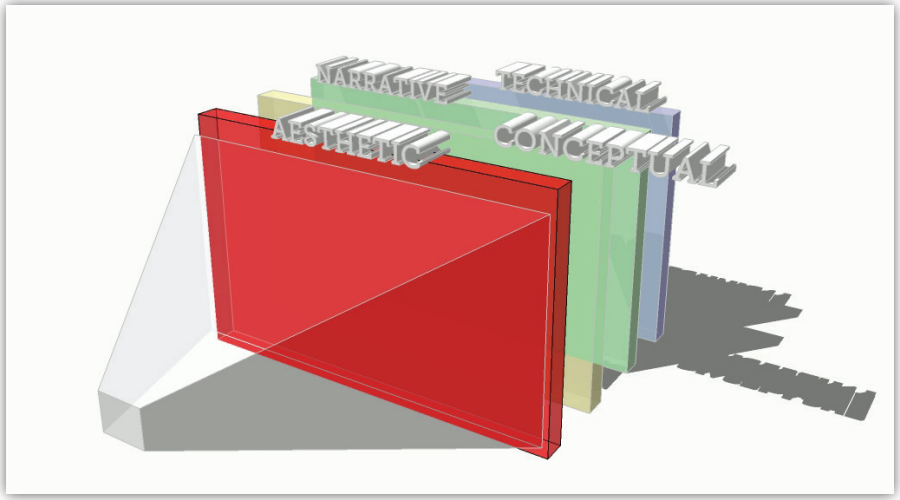
The TECHNICAL LAYER would be handled by specialists of all kinds that make the other layers possible, including: camera operators, sound engineers, costume designers, lighting technicians, software engineers, pyrotechnicians, stunt drivers and dialog coaches.

Delivered via the final rendered frame, the four CVC layers are integrated to solve the communications problem of the shot.

The following diagram represents the relative positioning of the CVC layers, aligned with the cinematic "visual pyramid" indicating the viewer's position and perspective. Note that the aesthetic layer is frontmost, effectively obscuring the others and reflecting the fact that most communication is first experienced as an aesthetic impact–images, sounds, textures, and patterns made up of color, shape in various arrangements.

Critical Visualization Concepts

4.3.1 (De-) Compositing–The Four Layers



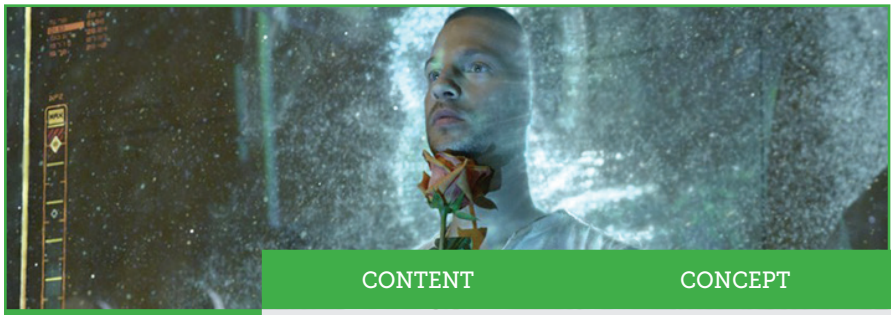
PRODUCTION EXERCISE
"CVC FLY-THROUGH"
4.3.1 (De-) Compositing
Adobe Photoshop & Sketchup
ACO 3.1

1 | Build a 3D representation of the CVC layers and fly a virtual camera through it.

2 | Concretely represent the conceptual interaction of the CVC layers by converging image search, Photoshop and Sketchup.

DOWNLOAD: creativityacademies.com/4.3.1-01.pdf

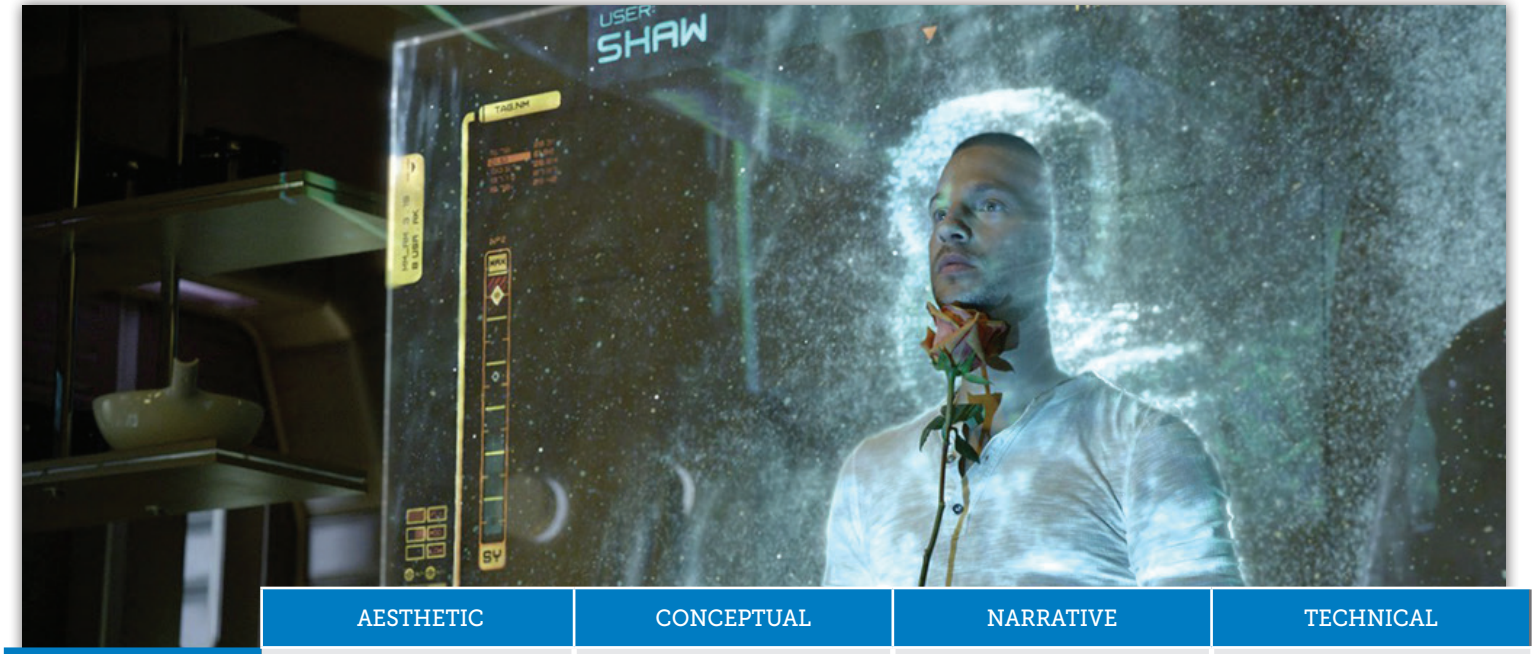
Each CVC layer has two closely-related aspects: the CONCEPTUAL aspect which relates to ideas, goals and requirements, and the CONTENT aspect which relates to design decisions and expressions. The following table shows how one might analyze the sampled frame from *Prometheus* according to this definition.



	CONTENT	CONCEPT
AESTHETIC LAYER	Crisp widgets vs. grainy video; Character's facial expression.	Create a compelling and contrasting blend of the human and the mediated.
CONCEPTUAL LAYER	Character is half-embedded in the hologram, holding the rose as a symbol of love.	Blur the distinction between the living character and the technology.
NARRATIVE LAYER	Character's behavior according to the movie's script. The video image on the hologram, the interface readouts and widgets.	Resolve the conflict between two main characters.
TECHNICAL LAYER	Actor, props, simulated hologram and user interface.	Make the hologram seem real; Design a believable interface for the hologram.

Critical Visualization Concepts

4.3.1 (De-) Compositing–The Four Layers



	AESTHETIC	CONCEPTUAL	NARRATIVE	TECHNICAL
THE ROSE				
UI WIDGETS				
THE ACTOR				

In the table below the image above, three elements visible in the shot are listed: the rose, the user interface (UI) elements (sliders, text, frames), and the actor himself. Fill in the columns to determine for yourself how these shot elements fit the aesthetic, conceptual, narrative and technical layers of the shot. For the last two rows, pick two other elements visible in the frame and analyze them in terms of the four CVC layers.

Critical Visualization Concepts

4.4.0 Critique And Rendering

4.4.0 Critique And Rendering

Whether compositing or decompositing, the final stage of critical visualization is rendering. The four layers of CV are either "collapsed" into the solution (message) with an emphasis on the aesthetic and narrative aspects, or they are "broken down" into a thorough and detailed analysis.

Critical Visualization borrows the term "rendering" from 3D modeling and digital video production. In 3D modeling, rendering refers to producing a "final" still image or animated sequence: all textures are applied, all lights are projected, all shadows are cast, all reflections are mapped. In video production, rendering refers to the combining of all audio and video tracks, and the application of effects, transitions and transformations.

In both cases the image or sequence is "finished," and if the design is successful, the result is an instance of communication that diverts attention away from the means by which it was produced. At this point the receiver commits attention to the message, processes and invests in it, and hopefully responds and acts in the way that its sender intends. Receivers react to messages and they are encouraged to "like" and "share" them, but these responses are very different from critique–which is often imagined to be the exclusive practice of experts.

Whether presented with a cereal box, movie poster, or animated sequence for a commercial, the receiver of the message is not expected to (and some would argue is actively discouraged from) considering the conceptual or technical layers of the message. Encounters with rendered composites are commonplace, but critiques (decompositions) are rare outside of the professional context.

The VFX shot breakdowns that are available on the Internet, though informative in the appropriate context, do not teach, nor are they critical in the sense being explored here. Most of these breakdowns are like magic tricks done in slow motion that reveal the sleight of hand without explaining how to distract the viewer in the first place. One goal of Critical Visualization and this curriculum guide in general is to address the latter point.

A Professional Communicator must be as versed in the deconstruction of messages as she is in their construction. Subjective opinion simply isn't a strong enough platform upon which to build a problem-solving process. The following chapter explores various models of communication that can aid the would-be Professional Communicators in assembling the detailed knowledge that facilitates effective critique.

With the capacity for effective critique and analysis at one's disposal, the technical intuition that is so common among many students can be supplemented with effective strategies and tactics of design and creation.

Chapter 5 The Communications Landscape

GOALS

1 | Understand signs, signals and basic semiotics as the foundation of communications, and develop an appropriate theoretical vocabulary.

2 | Understand the concept of a communications model for the analysis and simulation of a systems and individuals.

3 | Understand the essential role that human perception, memory, and attention play in communication.

4 | Understand the ten channels that CA defines as the means of sending and receiving messages.

5 | Understand the CA concept of a reaction path as a specific communications analysis tactic.

ADDRESSES A&C CORE STANDARDS:

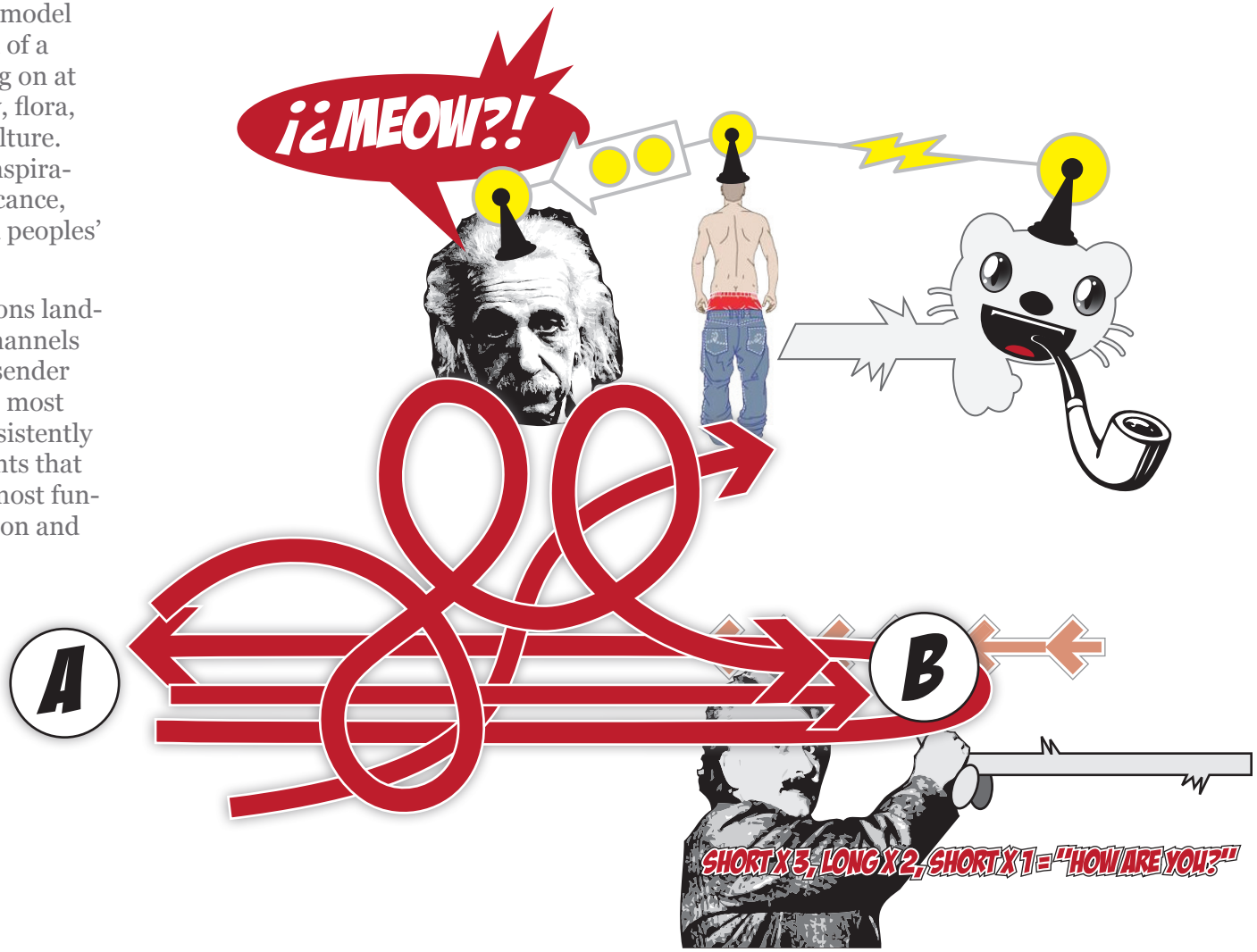
ACO 1.0, ACO 1.3, ACO 2.1, ACO 3.0, ACO 3.2, ACO 3.3, ACO 5.0

The Communications Landscape

5.0.0 Introduction

We call the sum total of all the media channels we are exposed to at any given moment a Communications Landscape. This model explicitly relies on the painterly idea of a great view full of diverse things going on at the same time: climate, meteorology, flora, fauna, and the artifacts of human culture. Landscapes were painted for their inspirational, historic, and symbolic significance, evoking the earth, the elements, and peoples' position in relation to them.

We all exist in various communications landscapes that are defined by various channels through which messages pass from sender to receiver. Every message, from the most epic to the most humble, can be consistently broken down into simpler components that invite consideration of some of the most fundamental aspects of human perception and communication.



The Communications Landscape

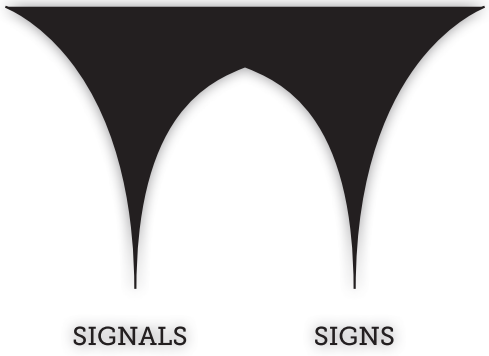
5.1.0 Signals and Signs; 5.1.1 Signals

Communication is a mixture of two elements of meaning: signals and signs. One way to conceive of the difference between them is to think about how humans communicated and organized themselves before they made use of language.

How did we survive without words, pictures and stories? Probably in the ways that other forms of life on Earth did: we gestured, vocalized in very specific situations, and adopted specific postures. We can look to other animals, from the poses and facial expressions of chimpanzees (video: http://goo.gl/gRZTk) to the elaborate mating dances performed by birds of paradise (video: http://goo.gl/SrUQT) to see the range of communication that is possible without language.

5.1.1 Signals

Though similar, signs and signals play distinct and different roles in communication. Consider the graphic below. Signs and signals arise from different points and expand in area until they meet in a shared region.



It is no accident that the resulting shape resembles architectural arches, for signals and signs are supporting columns for the larger structure of communication. You might also think of their relationship as two rivers feeding a single lake or draining into an ocean. The important thing to recognize is their beginnings as distinct entities and their conclusion in a mixed environment.

A signal is an element of communication that doesn't rely on language to convey its meaning. A signal, which can be a noise, a flash of color, a shape, a pattern, a gesture or a facial expression, is almost purely energetic in nature.

EXAMPLE 5.1 (ACO 1.0):

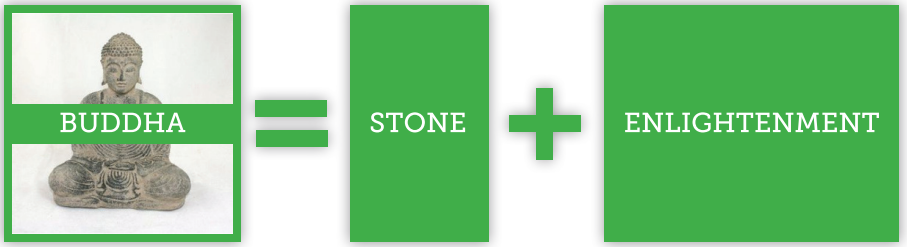
Consider the lights on a car. Their position, color, and rate of flashing are used to indicate the driver's intents, even though (and especially because) the driver is invisible and cannot be communicated with directly; he or she is "unreadable."

Continues...

The Communications Landscape

5.1.2 Signs

The lights themselves do not indicate anything about the driver's personality, mood, history, or gender. They also don't communicate any deeper information about the car. Critically, the function of the lights is independent of their resemblance to human eyes for instance, or whether they are LEDs, light bulbs, candles, or captured fireflies.



5.1.2 Signs

A sign is an element of communication that is deeply reliant on language to convey its meaning. A sign is a combination of **material** (its stuff: like plastic, wood, or a light's brightness), and **concept** (the idea that is being represented). A sign is like a double-sided coin that can be expressed through the following simple equation:

SIGN = MATERIAL + CONCEPT

The material component of a sign is determined by sensory perception (e.g. touch, sight, sound, temperature) while its conceptual component is determined by language, thought, and memory (e.g. words, recalled experiences, and collections of ideas).

Consider the lights on a car again. If one were to remove all the lights (head, indicators, brakes, etc.) from a car and scatter them randomly on the floor of a large empty room, what would it mean? What would it communicate? Practically speaking, beyond obviously indicating that someone removed all the lights from a car, their presence wouldn't mean anything.

EXAMPLE 5.2 (ACO 5.0): Humble to Haughty

Now consider a religious symbol, which compresses the essentials of complex stories and guidelines for living into a single material object. Whether worn, held, or mounted, the symbol advertises dedication to the religion's most significant principles.

Imagine three religious symbols made of three different materials: clay, iron, and gold. What does the object's material say about it?

Depending on one's perspective, the symbol made of clay could be considered the "best" because its humble material might represent humility or simplicity.

On the other hand, a gold symbol on an altar could represent the wealth of the congregation. Some might argue that the money spent on a symbol made of gold might be better used to serve the poor. Others might consider a symbol made of precious metal to symbolize how rare, brilliant and valuable the religion's teachings are.

A thief could care less, so maybe an iron symbol is better because it's durable, non-precious and can still represent the religion's values.

The process of signification is what gives the material its meaning, and it is entirely dependent on the context in which the object is perceived.

The Communications Landscape

5.1.2 Signs

Semiotics is the systematic study of signs and signification, a practice that was made famous by French linguist and theorist Roland Barthes. Barthes wrote extensively about all of the "hidden" meanings behind everyday instances of communication, from fashion ads to children's toys. Things that we take for granted, such as associations between war toys and society's general militarism, were fresh observations in Barthes' day. He believed that if more people understood how power and meaning were maintained and circulated through popular communication that there would be a chance for people to free themselves from its constraints, seductions and lies. Sadly, he was wrong.

PRODUCTION EXERCISE
"Faith: In Wood, Stone & Gold"
5.1.0 Signals and Signs
Adobe Photoshop
ACO 1.0, 3.0, 5.0

1 | Explore Christian, Buddhist and Egyptian religious symbols represented in different materials. Focuses on layer management, scaling and ordering of visual elements.

DOWNLOAD: creativityacademies.com/5.1.0-01.pdf

EXERCISE (ACO 5.0):

Consider the following table, which lists four examples of signals in the left column and signs in the right column:

Hunger: Being hungry is a physiological signal that every human experiences. The image of a hamburger can trigger desire for a hamburger, or direct a hungry person to a specific action.

The Color Red: The color red is used to get attention and signal danger or important information. The right hand column lists a few examples of signs based on this color.

Thirst: The slogan in the right column is a sign that is meant to be associated with a specific brand. The goal is for the thirsty person to associate satisfying this desire with a specific soda. Key here is the fact that the highly memorable slogan-sign "obey your thirst" is part of

The Communications Landscape

5.1.3 Message Connotation vs. Denotation

a broad advertising campaign that involves music, stylish visuals and celebrity endorsements, none of which has anything to do with the material reality of being thirsty.

Torch: A light is always a signal of human life and an indicator that certain aspects of the natural environment have been mastered. The use of the torch in art and advertising elevates this mastery to a conceptual level that signifies leadership, guidance, and by extension freedom and empowerment.

In the West, this concept goes all the way back to the Greek story of Prometheus, the god who on man's behalf stole fire from Mount Olympus–an symbolic interpretation that slumbers in the conceptual depths of every torch-sign we see today.

Fill out the remaining three slots in the table with examples of signals and signs.

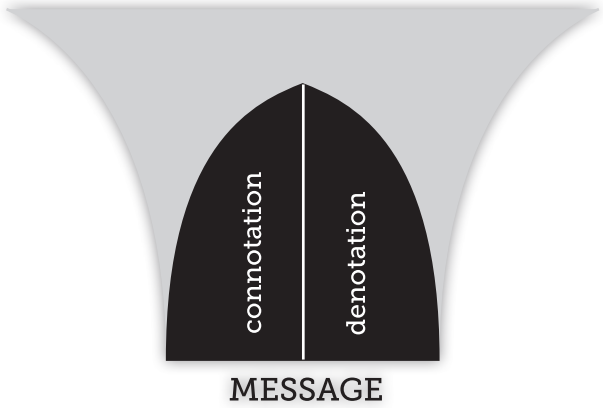
SIGNALS	SIGNS
Hunger	Image of hamburger
The color red	A red octagon; glowing demon eyes; the red body color of a millipede.
Being thirsty	"Obeying your thirst."
A lit torch	Statue of Liberty, Columbia Pictures lady, the Olympic torch.

Signs can still function as signals: consider the fact that wearing a religious symbol around one's neck in no way indicates, demonstrates, or communicates one's actual principles. Until the wearer is directly engaged, the jewelry functions no differently than a car's signal lights.

There is no final or fixed relationship between the material and conceptual components of a sign: the spiritual and material value of a religious symbol made of clay, lead or gold is by no means "built-in." All symbols, no matter how popular or ancient, from Air Jordans to iPads, are 100% designed.

5.1.3 Message Connotation vs. Denotation

The space between or beneath the structure created by signs and signals is defined by the message being communicated. A message is a tricky thing: being a vehicle for meaning it isn't directly tangible, and yet it exists in the human brain as a material and energetic configuration of biology, electricity, and chemistry.



The Communications Landscape

5.1.3 Message Connotation vs. Denotation

Perhaps fittingly, just as a sign is composed of material and conceptual aspects, every message has its connotative side and its denotative side.

Denotation is the "literal" meaning of a message. Assuming that the sender is not lying or being poetic, if she yells "your pants are on fire!" while pointing at a receiver, this is exactly what she means mean.

But in modern communications, one cannot assume that the sender is *not* lying or being poetic! Poems and lies are exactly what makes modern communication so seductive and enjoyable. Besides employing actors, creative writers, and special effects, our media is full of disclaimers, warnings, fine print, and indications that the messages that we are consuming shouldn't be taken literally. Most modern communications, especially commercial, is in fact driven by fantasy: where breakfast cereal is nothing more than sweetened ground grain, Professional Communicators creates the cereal's ever-expanding universe of cartoon mascots and "healthy lifestyle options" that consumers invest in.

Exploring the "lies and poetry" that are associated with messages leads to understanding connotation. Connotation is the "feeling" that a message elicits beyond what it is trying to say. The McDonald's slogan "I'm Lovin' It" refers to the food at the denotative level, but to a lifestyle at the connotative level.

Connotation is like the hidden bulk of an iceberg; It forms the cloud of meaning that hovers around a message, produced through an extensive process of selecting "this" over "that" at every step of its creation.

When things like color, texture, typography, the model's physical build, the angle of photography, the use of black-and-white or color film, or rock over classical music are decided when crafting a commercial message, it adds up to much more than the denotative call to "buy this right now." All toothpaste is essentially the same, but celebrity endorsement is intended to say something more. Having one celebrity over an other endorse a product has profound connotations. In an exaggerated case, consider why a *leading* toothpaste brand would not use an adult film star to endorse a product even though such a choice would easily cut through the clutter.

If you've ever recognized a moment in advertising when the actions being shown actually represent something else, then you're already familiar with the interplay of connotation and denotation.

The most direct exploration of connotation and denotation one can carry out is a systematic survey and questioning of why images of women are so frequently used to sell products.

QUICK LITERACY: *Killing Us Softly (1-4): Advertising's Image of Women* (Documentaries).

There is no better illustration of connotation vs. denotation than the use of the female image in advertising. Jean Kilbourne began collecting images of women in print advertising over twenty years ago. She identified consistent patterns: in the service of a product, women were often portrayed as weak or helpless; reduced to a single body part; imaged in situations that infer violence or aggression; and presented as sexualized objects. Her work argues that these distorted presentations contribute to the negative self-image of girls and women.

The Communications Landscape

5.2.0 Perception and Memory

EXERCISE (ACO 3.3): Would You Axe Your Mother?

Consider this ad for Axe Body Spray, a product targeted toward young men (YouTube: http://goo.gl/zgRC). It begins with a lone bikini-wearing woman of idealized physical proportions hunting something in the jungle. She is soon joined by "thousands" of other women who are shown fighting and falling over each other to get whatever they all seem to be after. It is revealed that they are converging on a young man ecstatically applying the body spray. The clip ends with the slogan "Spray more, get more."

1 | What is the promise made by the Axe brand to its potential consumers? Is this coming from the connotative or denotative side of the message?

2 | Is Axe body spray, as it is portrayed in the clip, a sign or a signal?

3| Is the Axe body spray clip itself a sign or a signal?

4 | How are women portrayed in this clip?

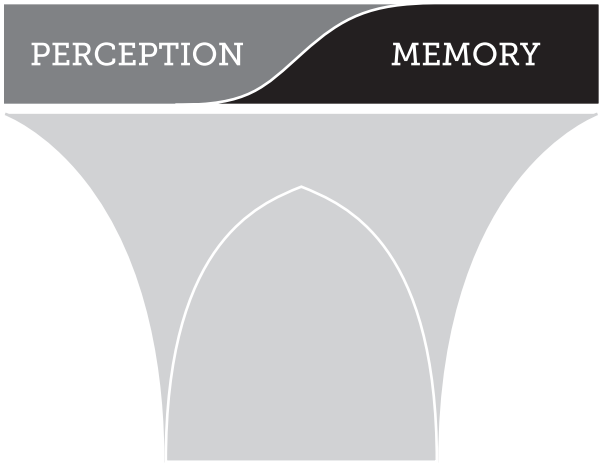
5 | It is clearly assumed that a man is the intended receiver of the Axe message. How is this message received by women? How might variables such as age, ethnicity and religious belief affect how the Axe message is received?

6 | How would the Axe message be different if everyone in the clip were Asian? African-American?

7 | Describe who you believe the "typical" receiver of the Axe message is, and discuss how that person would react if the only thing that was different in the clip is the ethnicity of the young man using the body spray.

5.2.0 Perception and Memory

Understanding communication from the inside out starts with two simple aspects of being human: *perception* and *memory*. In the following diagram we see perception and memory stacked on top of the structure created by signals, signs and a message. Memory and perception are part of the same conceptual block of mind. They are shaded differently to symbolize their subtle differences, and joined by a curve to represent their constant interaction, like the light and dark of yin and yang.



The Communications Landscape

5.2.0 Perception and Memory

QUICK LITERACY: Radiolab on the slippery nature of memory and perception. http://www.radiolab.org/2007/jun/07/

Signals, signs and the message flow from the bottom up to feed, or alternately, support perception and memory. All that we believe ourselves to be is supported by electrical signals in our brains that through neural networks of water and chemistry somehow represent signs of everything from dogs, languages, and skyscrapers to grief, email messages, deadlines and triumph.

Perception is the route that the universe takes to become meaningful to the human being. Though it seems ridiculously (almost painfully) obvious that without perception there is no communication, if we are not reminded of how much the world changes when one or more of our senses is eliminated or amplified, it becomes difficult to appreciate how sophisticated modern communications have become.

EXERCISE (ACO 1.3): Who Do You Like?

Write down the name of your favorite entertainer. Explain briefly how you came to be aware of this entertainer. Write down nine adjectives that you associate with your favorite entertainer, and sort them into the categories defined in the following table. Finding entertainer-related adjectives related to sight and sound is straightforward; adjectives related to feeling should be associated with emotional reactions.

ENTERTAINER NAME:

SIGHT	SOUND	FEELING

Write down the name of your favorite piece of media produced by this entertainer. Explain briefly how you came to be aware of this piece of media. Write down nine adjectives that you associate with this piece of media, and sort them into the categories defined in the following table.

MEDIA TITLE:

SIGHT	SOUND	FEELING

Discuss or write about how different your awareness, knowledge of, and preference for this entertainer and media would be if you lost or never had sight, sound or feeling.

The Communications Landscape

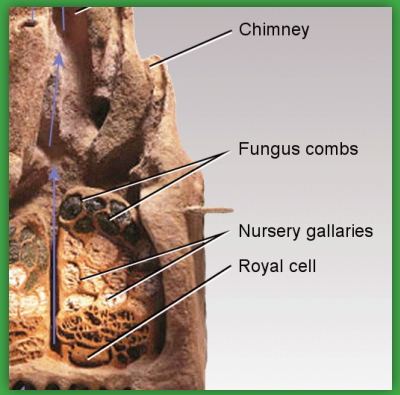
5.2.0 Perception and Memory

Memory is the system by which humans record past experiences with the universe, giving them the ability to study, model and anticipate it. On the philosophical level memory is fascinating because it means that humans, being part of the universe, are a means for the universe to be aware of itself. On the practical level, without memory, communication becomes a matter of passing signals back and forth, signals that trigger built-in reactions.

EXAMPLE 5.4: Hive Society

Ants use scents to direct highly sophisticated activities including agriculture, construction, exploration, migration and warfare. However, the physiology of an individual ant does not support long-term knowledge or awareness in the way that a human being can recall the exploits of ancestors or nations. And yet we fight battles with socially sophisticated insects every day, and often times these battles come to stalemates! Who is to say which species is "superior?"

Wasp Nest



Termite Mound

EXERCISE (ACO 2.3): How We Decide?

Though there is certainly a difference between human and ant social organization, a good deal of our behavior is based on signals triggering built-in reactions.

1 | Write down and discuss three examples of everyday actions you, at the individual level, take that are based on signals and not memories.

2 | Consider and discuss how hard it would be to drive a car or ride a bicycle if you had to consult your memories every time you had to make a decision while doing so.

3 | Consider and discuss an article of clothing that you are wearing that you selected with full awareness (which requires memory).

4 | Consider and discuss an article of clothing that you are wearing because of built-in reactions.

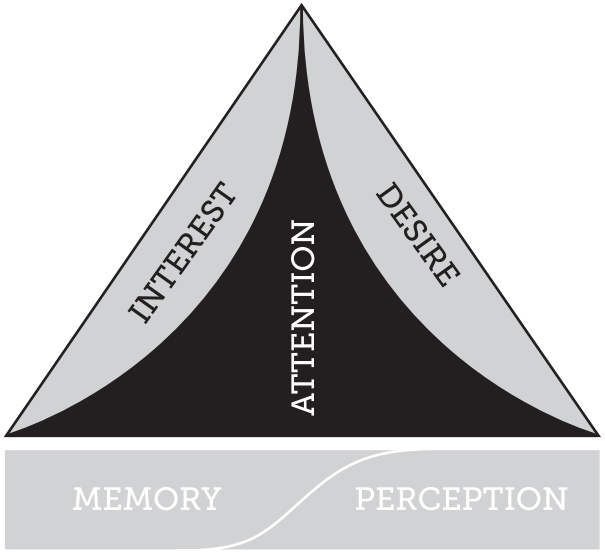
5 | Consider and discuss how the spread of a rumor and a viral video demonstrates ant-like behavior on the part of humans.

6 | Consider and discuss how the spread of a rumor and a viral video demonstrates exclusively human behavior.

7 | Consider and discuss why rumors and viral videos could not spread if human beings didn't have memory. Consider this only at the level of the rumor or video's message and meaning – assume that the technical requirements of spreading it do not matter.

The Communications Landscape

5.3.0 Attention; 5.3.1 Interest



Attention, interest and desire are three closely related but distinct mental and emotional states that are supported by memory and perception. They work together like notes in a musical scale. In the diagram above we see a pyramid shape divided into three sections: attention, interest and desire, "built atop" the interaction of memory and perception. The regions labeled interest and desire are curved to represent the pressures they apply to attention to sculpt, shape or direct it.

5.3.0 Attention

Attention is the raw material, refined fuel and currency of communication. In the preceding diagram, attention encompasses the entire pyramid supported by memory and perception. Thought of as a reservoir of mental energy, attention can be directed to and through the various senses, thought, and emotion. In everyday life we experience attention as something finite: we speak of attention spans, of attention as paid or invested, of attention measured in terms of time well-spent or wasted. Though attention is finite, it is also timeless: we don't notice whether it has been deeply engaged or not at all until after the fact, when it has been used to build memory.

EXERCISE (ACO 2.2): It's a Trap!

1 | List three sounds that will automatically get your attention (trap you) when you hear them.

2 | List three colors that will automatically trap you when you see them.

3 | Describe three trap images that have worked on you.

4 | Describe a moment where you have been trapped by an instance of communication but were then disappointed by the message.

5.3.1 Interest

When something "gets your attention," it is triggering interest. Interest is attention powered by consciousness and granted a magnitude and a direction. Interest is a vector, or directed attention. Interest can be triggered from within or outside the human sensory-motor system. It can arise from an itch, a memory, or some degree of comfort or discomfort, or it can be triggered by an image, an attractive or repulsive scent, or a shocking sound. Interest is dependent on perception, is triggered by signals (or signs treated as signals) and does not necessarily require memory.

EXERCISE (ACO 2.2): Once You're In...

1 | List three sounds that, once you are trapped, will increase your level of interest.

2 | List three colors that, once you are trapped, will increase your level of interest.

3 | Describe three images that have increased your level of interest once you've been trapped. Indicate what trapped you in the first place.

4 | Describe a moment where you have been trapped by an instance of communication the message failed to hold your interest.

The Communications Landscape

5.3.2 Desire; 5.4 Media/Medium

5.3.2 Desire

Desire is also powered by consciousness, and it too is a vector. Signs not signals trigger it. When a driver sees another car's left turn indicator, calling his or her reaction to it (slowing down perhaps) a desire would be a poetic statement. Desire is associated with emotion and the use of a surplus of attention. Consider how much effort is put into making a hamburger look delicious in a television commercial or in an image the size of an eighteen-wheel truck trailer. The lovingly photographed hamburger is a sign designed to arouse hunger, even if the viewer is not getting any physiological signals indicating that he or she should eat.

The differences between interests and desires can be fuzzy, but building a communications model helps us to able to make distinctions between them. For communication does play on the subtle differences between the two, ultimately reflecting the sign versus signal contrasts discussed earlier: being thirsty (which triggers interest) is not the same thing as "obeying your thirst" (triggered by desire).

EXERCISE (ACO 2.2): Give Me More

1 | List three sounds that will automatically trigger your desire for something and include what that thing is.

2 | For each sound, analyze what happens as your mind moves from attention, to interest to desire. What is it about the sound that drives you from attention to desire?

2 | List three colors that are traditionally associated with the emotion of desire.

3 | Find three images, each from a different decade, that for you represent desire.

4 | Describe a moment where your desire has led you to interact with an instance of communication that ended up disappointing you.

5.4.0 Media/Medium

The modern communications landscape is probably the most sophisticated, complex and ever-changing galaxy of signs and signals ever conceived by human beings. This landscape was already built with media (the "stuff" that carries a message): fashion, architecture, make-up, advertisements, radio programs and television shows. However, the emergence of digital media delivered via electronic networks has transformed the bulk of communication's material aspects into almost purely conceptual forms.

Digital media and computing technology made the channels of communication interchangeable, introducing an astounding level of flexibility to the delivery of messages. The networks that carry the messages have a kind of awareness: each message in the network announces what kind of media it is, its origin and destination, and dozens of other descriptive variables. This additional layer of invisible signification wrapped around every message is frequently considered to be more valuable than the message itself (see: http://goo.gl/9TMho and http://goo.gl/gYivf).

The Communications Landscape

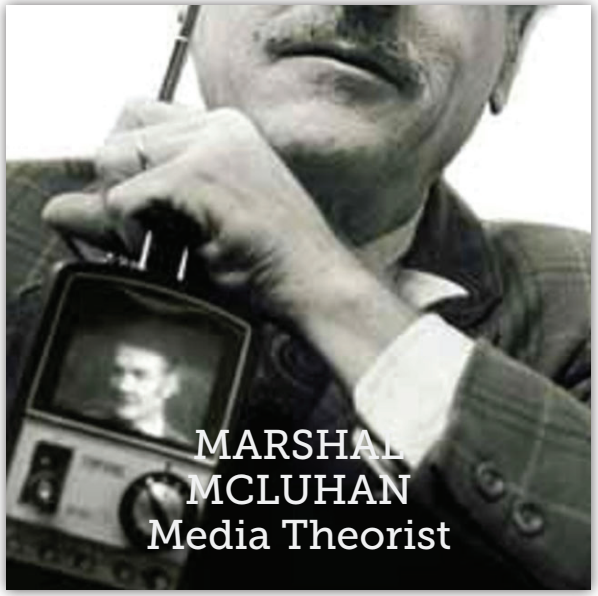
5.4.0 Media/Medium

This is a concrete expression of media theorist Marshall McLuhan famously declaration that "the medium is the message." In other words, the way that a message is delivered is far more meaningful than its content.

EXAMPLE 5.3: What Is Love?

To grasp this concept, think about all the different ways one person can say, "I love you" to another. It could be as direct as one person looking another in the eye and whispering the words, or it could be as extravagant as giving the other a piece of expensive jewelry or a luxury car. In these cases, whispers, diamonds and Lamborghinis would be the message's medium, and they say quite a bit about the means and values of the sender and receiver.

Thinking at the scale of the entire planet, McLuhan was considering how the fact that we can transmit sounds and pictures anywhere we want tells us much more about the state of the human species than any individual message. What we communicate is less significant than the spread of electronic communication itself. After all, we haven't really said anything new since we first attained language; we still profess love, hatred, jealousy, humor, etc., through poems, songs, stories, pictures and dances. But how we communicate, and the impacts that new means of doing so have on human culture is a constantly-evolving field of investigation and a source of tremendous market growth.



With $140 billion dollars spent on advertising in 2012, companies dealing with information technology, communications, marketing, public relations and branding are making tremendous investments. The modern communication network's ability to track and thereby monetize the circulation of messages has become increasingly valuable.

The Professional Communicator must have an unparalleled sensitivity to the nuances of this rapid transformation, and be prepared to exploit old and new signs and signifiers to drive the success of the concepts she or he is trying to turn into messages. Though the modern communications landscape is increasingly defined by purely digital exchanges (e.g. auctions for virtual items in games like World of Warcraft), a tremendous amount of energy is still put into directing people back to the "real world." Hence, the migration of "Angry Birds" to areas of traditional merchandising such as t-shirts and lunch boxes; and the ongoing success of Amazon, which is still committed to the delivery of physical objects through the most efficient and intelligent virtual system possible.

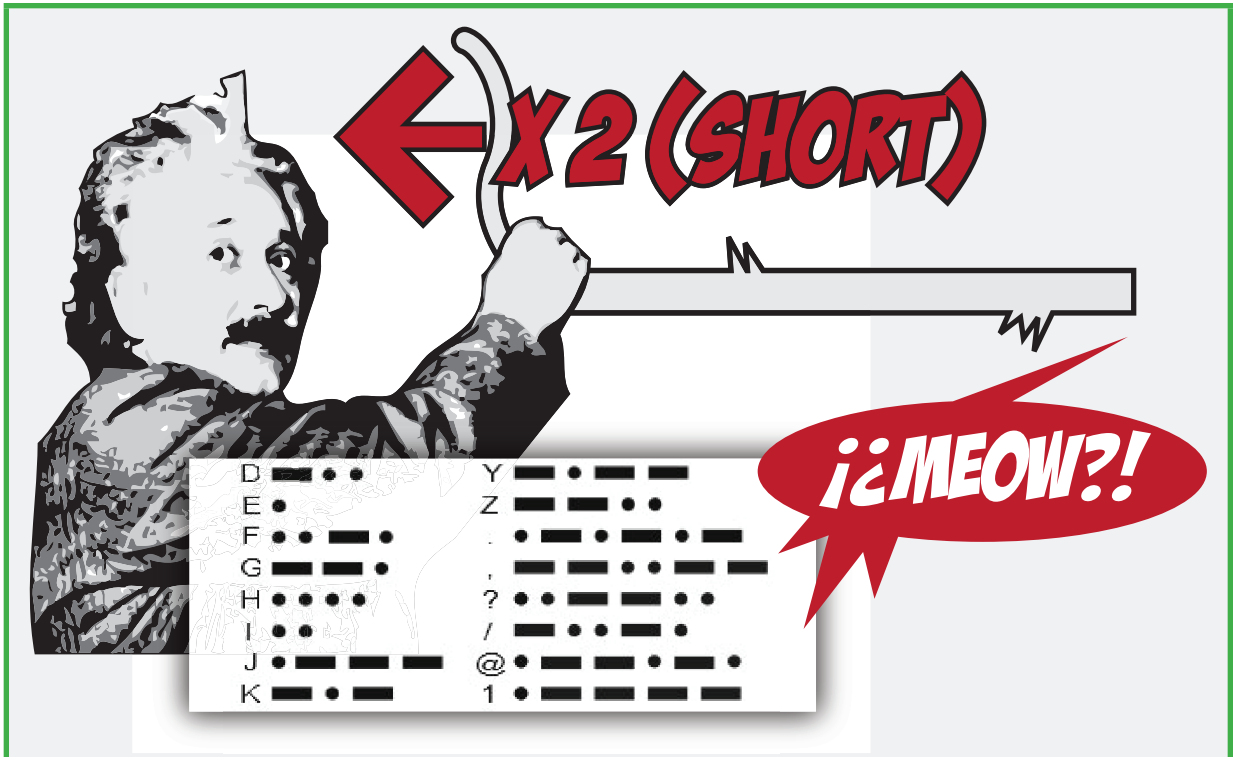
The end result is a communications environment that is complex, fluid and navigated most effectively by those who first understand how the mind works, then the basic interaction of signals and signs, and finally the systems that are built to collect and distribute them.

The Communications Landscape

5.5.0 Code

A code is a set of unique rules used to convert or translate between message and medium. Successful communication on a channel requires both sender and receiver to use the same code. Code is independent from the medium and the message. Consider: the dot and dash combination used in Morse code was designed to send messages through wires as electrical pulses, but it can be used on a variety of channels and mediums: flashing lights, striking a surface, opening and closing one's eyes, moving a finger back and forth, etc.

Spoken language is a code, and slight variations can result in different messages. Try saying, "your pants are sagging" with tenderness, scorn, or sarcasm in your voice. Many languages (e.g. Asian and African) are tonal: a single syllable can change the meaning of a word if it is uttered in a low, neutral or high pitch. The Yoruba language of West Africa is so tonally precise that it can be spoken using specialized drums!



EXAMPLE 5.6:
Morse Cat

Here we see Einstein using one end of the looooooong cat to send a message to New York. Everyone is at least familiar with Morse Code: a system that uses dots and dashes to represent letters of the alphabet. Morse Code is known as a binary code because it uses only two symbols to represent the content of its messages. What letter is Einstein coding?

The Communications Landscape

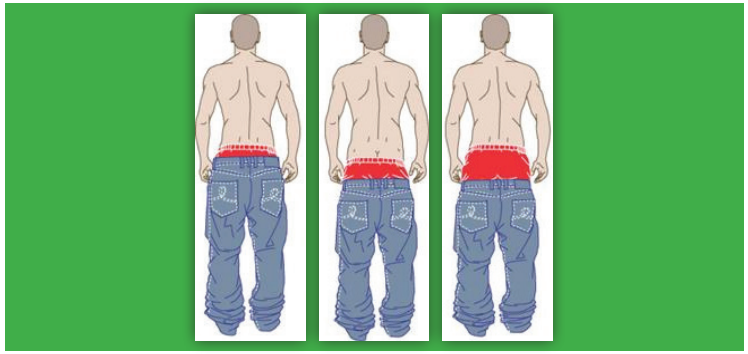
5.5.0 Code

EXAMPLE 5.7 (ACO 3.3): Getting One's Sag On

In the visual channel above, all these gentlemen are "sagging." Are they all using the same code? Are they all sending the same message? Your answer will depend on who you are, what you know and what you believe. Remember: "ceci n'est pas un pipe."

The position of one's pants doesn't automatically mean anything, so what does it mean to sag? If we treat it like a code, we must assume that sagging isn't an unfortunate wardrobe malfunction. In cultures that have adopted western clothing, intentionally showing one's butt is a very special insult. Perhaps the sender wants to express how unconcerned they are with the feelings of the receiver, in short "I don't care." Sticking to a visual channel only, this could be accomplished with a facial expression, a rude gesture, or writing on the back of a t-shirt. But butt exposure has a certain variable intensity. Could the degree of sag express the degree of indifference? Let's just say it does!

Below, the sag has been abstracted in terms of the viewer's perspective and the relative exposure of the butt. We now have a code expressing three degrees of indifference. Now we can use this code anywhere!



It isn't easy to model communication because one can't get "outside" of it. The closer one looks, the more its elements exchange qualities. Channels can become messages; A medium can become a code; senders switch to receivers and so on. It isn't out of control or random, just highly complex and constantly changing.

Professional Communicators study, create and exploit these changes to construct the world of ideas and desires we live in. Nothing is accidental in the modern communications environment.

Every message has been designed to get our attention, and then get our money. If one attempt fails, the message will be repeated, varied, translated, often with greater intensity than before. Sooner or later, one way or another, most people react to the messages they are being constantly bombarded with.

The Communications Landscape

5.6.0 Abstract Communications Models

5.6.0 Abstract Communications Models

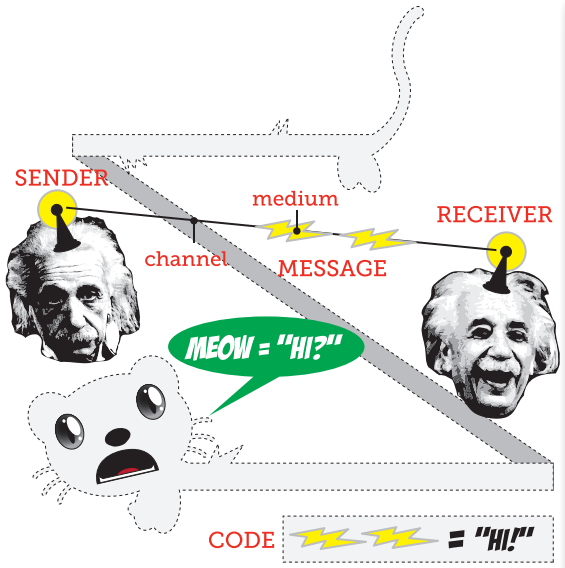
The clear success and domination of the modern communications landscape by commercial priorities is based on manipulating interests and engineering desires. To better understand how this process works at a general level, we need to take a closer look at what all examples of communication have in common. And for that we need a communications model.

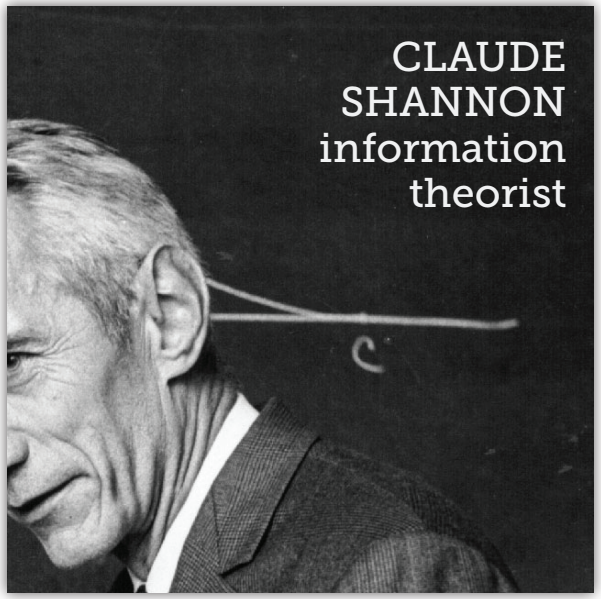
As we move from the specific to the general we are doing something called abstraction, or "pulling away." Abstraction allows us to focus on general things without getting lost in the details. An abstract communication model helps us understand what all forms of communication have in common, including movies, CD covers, traffic signs, t-shirt designs, magazine layouts or even facial expressions!

5.6.1 The Systems Model

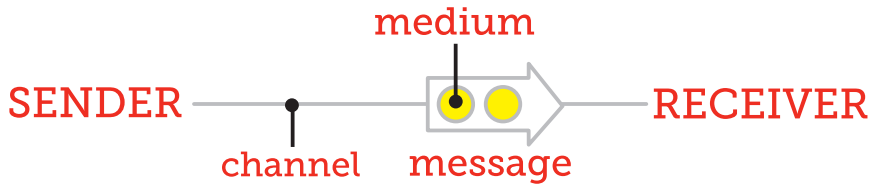
Information theorist Claude Shannon's research made the bulk of modern telecommunications and computing possible. At 21 he proved that binary logic could be embodied in electrical circuits, thereby ushering in the digital age. The non-cat diagram (right) is a simplified version of his "general communications system."

"You see, wire telegraph is a kind of a very, very long cat. You pull his tail in New York and his head is meowing in Los Angeles. Do you understand this? And radio operates exactly the same way: you send signals here, they receive them there. The only difference is that there is no cat."–Albert Einstein





Most of what we need to know about communication is in the image of the looooooooooong cat. Breaking the cat down into its different relational parts we can create something called an abstract communications model (below).



The Communications Landscape

5.6.1 The Systems Model

Sender & Receiver

These are the entities that are doing the communicating. Sometimes there is only one or the other: a magazine on a shelf is a sender, and a car radio antenna is a receiver. Most of our communication technologies, such as cell phones and televisions, function as both. The human face, which we use to read and express feelings, is also a sender and receiver.

Channel

The channel is the "way" a sender and receiver are connected. Communication often uses multiple channels to connect senders and receivers. A television program has at least two channels: one for sound, the other for image. The telephone has one channel: for sound. A book or magazine has at least one: for words, but can have two if there are illustrations. A conversation often has at least three channels: one for speech, the other for body language, and a third for gestures and expressions.

Medium & Message

If the channel is the connection between sender and receiver, the medium is the energy crossing that connection, and the information in the message. Medium and message are tightly bound to each other and sometimes indistinguishable. CONSIDER: the *medium* of the spoken message "Your pants are on fire" is *sound*, and it has nothing to do with the message itself. You could also make hand gestures, use Morse code, draw a quick sketch, or even shoot a video on your cell phone and send it to the unfortunate victim.

EXERCISE ACO (3.2):

1| Take a real-world example of communication, such as a television advertisement, movie poster, or party flyer and break it down into the component parts of the model: sender, receiver, channel, medium and message. List those elements in the appropriate sections of the table below.

COMMUNICATION EXAMPLE:	
SENDER:	
CHANNEL:	
MEDIUM:	
MESSAGE:	
RECEIVER:	

The Communications Landscape

5.6.2 The Individual Model

EXAMPLE 5.5 (ACO 3.2): This Is Not A Pipe

What is this?

"A pipe," most would say, but it isn't. This is a digital image of a painting featuring a nice rendering of a pipe. This may seem like a ridiculous detail but it is incredibly important.

In communication we are rarely referring to actual things, but using sound, light and gesture to REPRESENT them. If we were to analyze Magritte's painting in terms of our abstract communications model it might break down as follows:

SENDER: Depending on the context of the image, the sender could be the author of this curriculum guide, the museum where the painting hangs, or the painter.

CHANNEL: Print, graphics.

MEDIUM: Pixels or paper and colored light.

MESSAGE: "Ceci n'est pas une pipe" translates from the French to "this is not a pipe." If you don't read French, is the message for you? Further, are these words meant to be the "real" message that the artist intends to send? See connotation vs. denotation below for more discussion of this point.

RECEIVER: You.

5.6.2 The Individual Model

The systems model (recall Claude Shannon's model above) is useful for modeling large-scale situations where the individuals are anonymous and their connection to a network is more important than who they are.

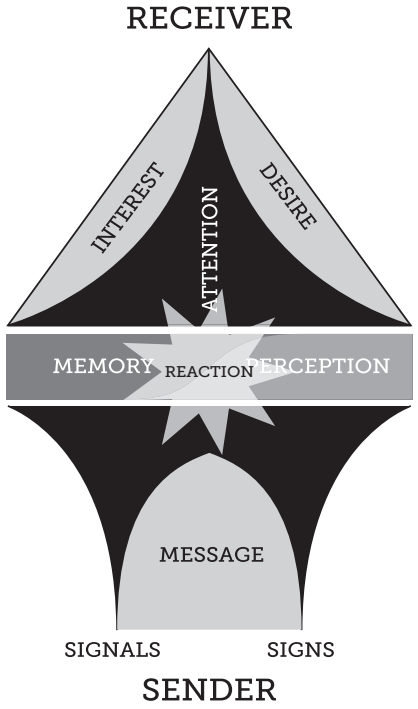
But what if we want to consider how one person or a generalized group reacts to a communications strategy? The systems model does not invite us to think about degrees of reaction, or whether the receivers are being reached through what they remember or what they perceive at the moment of communication. The individual model (right) unifies concepts from previous sections, and can be used to represent the much more complicated and dynamic process that emerges during the act of communication.

Neither model is meant to be explicitly analytic, that is, one cannot plug numbers into them as if they were equations. They are more strategic in nature, and designed to help with higher conceptual level

The Communications Landscape

5.6.2 The Individual Model

thinking that invites the integrated consideration of multiple aspects of communication.



Both the systems and individual models analyze a process. Neither specifies distinctions between messages or media. For example, whether a message delivered through a movies, comic book, fashion statement, or a music's genre is irrelevant. At the systems level, all that matters is the message's passage through the network. At the individual level, all that matters is the reaction generated in the receiver.

For some theorists and critics, the pursuit of reactions and control of networks has become problematic if not outright dangerous. In his documentary/lecture "Advertising and the End of The World," Sut Jhally argues that the ubiquity and intensity of modern advertising is having profound effects on society. He documents how ads are increasingly reliant on creating strong emotional reactions in their viewers in order to distinguish themselves from the competition. This situation is largely a race to the bottom from Jhally's perspective; advertisers will consistently push any boundaries they can to stand out.

This scenario produces hamburger commercials that reference sexual acts, and a general communications landscape that constantly showcases amplified or exaggerated versions of the impossible, the aggressive, the sentimental, and the stereotypical.

The situation wouldn't be so problematic if it were restricted to one or two channels among the ten considered in the next section. The reality is that competition for attention takes place across all channels. On some of these channels, like music and video for example, the pursuit of reactions at all costs can have synergistic effects. Shocking sounds and shocking images can mutually amplify each other. In a market, competitors emulate and attempt to top this success, which in turn triggers another loop of amplification and extremism.

All communication produces a reaction in the receiver, even if it is at the rudimentary level of having the senses stimulated. Eliciting a reaction is the goal of modern communications, and the next section explores "reaction paths," or generic mechanisms used to engage interest and create desire.

The Communications Landscape

5.7.0 The Ten Channels

EXAMPLE 5.8 (ACO 3.2): Carl's Jr. Ends the World

Built atop the pre-linguistic foundation of the absolute necessity for the species to eat and reproduce, modern commercials are constantly mingling these two impulses in order to grab attention and push limits. The fast food chain Carls Jr. has consistently pursued a strategy of conflating eating with sex. If the denotative side of the message is that the viewer should prefer Carl's Jr. burgers, what is the connotative side?

After considering the two dimensions of this ad's meaning, does it make a difference that the model, Padma Lakshmi is also the host of the popular television show *Top Chef*? Does the relevance of her profession, and a clever cross-promotional effort trump exploitation?

5.7.0 The Ten Channels

We are surrounded by communications channels. Messages come to us in the form of songs, fragmented images, radio documentaries, scraps of paper on the ground, tweets, bumper stickers, movies, political speeches, status updates, etc. They arrive as signals and signs, vying for our attention, triggering our interest and arousing our desires.

Where once there was a fairly straightforward landscape that most people shared, shaped by things like music, advertisement and newspapers, today there is nothing so simple.

Creativity Academies works with ten channels that are not mutually exclusive (they often nest, intertwine, and alternate with each other) and cover the majority of the ways that messages get to us. At any given moment of modern communication, the landscape is more like a maze than a simple grid. Each of these channels is discussed below, in alphabetical order.

GAMES: This channel includes analog and video games, but is generally understood to reference the latter. Video games demonstrate a highly sophisticated and increasingly immersive integration of narrative, visual and sound design, interactivity, and programming of everything from physics simulations to artificial intelligence. Direct user interaction distinguishes games from the other forms of mass media that preceded them, and their ever-deepening integration with other aspects of society from the addictive qualities of the "ville" games to sports simulations whose virtual players are fully matched with the abilities of their real life counterparts.

GRAPHICS: This channel covers all print and electronic media, representing the totality of typography, layout, package design, data visualization, information design, etc. Whether considering a magazine cover, a graffiti mural, a television commercial, someone's tattoo, or

The Communications Landscape

5.7.0 The Ten Channels

the opening credits of a film, graphics are a dominant channel of any communications landscape. The graphics channel, which creates meaningful spaces from the intentionally directed interaction of lines, shapes, colors and textures, probably predates language itself. Being ancient, rich and mysterious it is constantly renewed from its deepest levels.

FASHION: This channel covers clothing but also efforts to integrate technology and lifestyle trends in their efforts to express themselves as individuals. Fashion embraces what people wear, how they act, and also what they think. This is why, for example, the smartphone one uses or covets, and one's attitude toward the company that makes it has become so important in many peoples' lives. Aesthetics and a kind of brand loyalty that borders on ethnic identity often override considerations of the device's specifications and performance. To be fair, the sheer power of these companies' marketing efforts is difficult to resist.

MUSIC: This channel covers all of music, from that found on popular charts to the soundtracks written for commercials, video games and films. It also covers ring tones, jingles, and the ambience of a club or passing car. Music is the only channel that is on one hand completely immersive and intimate, and on the other easily segregated and alienating. Think of the headphones loud enough to be heard even when someone else is wearing them, the stereo blasting from the apartment or vehicle next door, and the ability of the unwatched TV to grab attention based on the music it is emitting.

PHOTOGRAPHY: Second only to graphics in terms of ubiquity and flexibility, the channel of photography (of products, people, places…) in full color and at every conceivable scale from billboard to smartphone screens, profoundly shapes the communications landscape. Influenced by painting's rendering of landscapes, portraits and still life representations (*See Chapter 2: Art And Design, particularly section 2.1*), the photographic channel allows the rapid production of images that are limited only by the imagination of whoever is arranging the scene before the lens. Combined with digital tools for the simulation of light, objects, textures and motion, and technologies that allow the creation of images based on other energetic frequencies (infrared, ultrasound, microwave, x-ray, etc.) this channel is functionally unlimited in terms of what messages it can carry.

PRINT: This channel covers another immortal medium that will probably never disappear no matter how popular touchscreens, tablets and electronic books become. We still use magazines, flyers, posters, packaging, displays and all manner of signs to communicate; the tactile, battery-free experience still matters. Millennia old, the print channel has defined its own relationship to images and text, and developed a visual language that is independent of that created by the camera. Though we are moving into communications landscapes that are less determined by words themselves, the long history of typography and layout remains highly influential.

SOUND: Often ignored or mistakenly associated with the general category of music, this channel covers all the intentionally designed noise that isn't musical that surrounds us on a daily basis. If music is a sign, then sound is a signal. Sound covers the control of environmental ambience, and is as concerned with suppressing unwanted noises as it is with organizing those that are desired. What is not heard in an environment can communicate just as much as what is. Alarms, sound effects, screeching tires, the myriad of beeps, clicks and ticks that provide feedback for digital interfaces, and electric hums all fall into this category. So does strategic use of silence.

SPEECH: This channel covers the deployment of spoken language in the communications landscape. From the narrators that

The Communications Landscape

5.7.0 The Ten Channels

lend their voices to commercials to newscasters, the conversations we overhear and the synthetic voices of our GPS navigators and smartphone assistants. There are times that speech can outweigh, rescue, or alter the interpretation of a powerful image. The speech channel can reinforce or shatter profound preconceptions. Examples include testimony, description, poetry, debate, argument and smooth talk. A speaker's accent, diction and vocabulary still bears tremendous influence. So much so that specific voices are sought to narrate movie trailers, insurance commercials, and advertisements for used cars. Mass attitudes toward speech are based on traditions established by cultural history and the past successes of market-based decisions.

VIDEO: This channel covers the moving image in general, recorded or live, presented in the space of a frame or screen. Here video is a generalized term that embraces all sources of moving images, from hand animation, computer simulation and cinema, to live footage coming from Mars. It is distinguished from graphics, whose energies it can support and extend, because it is produced, managed, distributed and consumed through a different set of technologies and procedures. Where graphics are rooted in ancient relationships between the eye and the hand (perception and the body), video is based on relatively new relationships between a mechanical or electronic eye and a mass audience. The moving image has its roots in various devices such as kinetoscopes and panoramas, but it wasn't until these early experiments in simulating natural motion were joined with photography that the first virtual realities emerged.

WEB: This channel covers the latest communications strategies that humans have developed: the dynamic presentation of digitized information characterized by its transmission over a network. Unless otherwise specified, the web is treated as the generalization of networking power: from RFID tags to drones one controls via a smartphone. It is only natural that computers (universal machines that can become typewriters, video editing stations, audio mixers, drafting tables, molecular modelers or anything else that can be programmed into software) were eventually networked to each other. The web is a platform and interface for presenting any digitized message, no matter what medium it is in.

It was thought that the physical world would be the limit to the web's reach and influence: what was great about the web was thought to reside only on the screen. But then smartphones came along, and now relatively cheap printers that output objects instead of graphics are poised to become mainstream.

The Professional Communicator must be able to use multiple communications models in order to operate effectively. Sometimes the emphasis will be on working with a systemic model like Claude Shannon's. Other times the emphasis will be on working with a model that represents the individual's reaction to messages. One is not better than the other. The important thing is to be able to use both.

PRODUCTION EXERCISE
"Mapping Your Landscape"
5.7.0 The Ten Channels

Photoshop, Sketchup
ACO 1.2, 1.3, 2.1, 2.2, 2.3, 3.2
Understand one's own relationship to the communications landscape by building a representation of it in 3D. Exercise makes use of math skills, proportion and basic statistics.

DOWNLOAD:
creativityacademies.com/5.7.0-01.pdf

The Communications Landscape

5.8.0 Reaction Paths

All communication produces a reaction in the receiver, even if it is at the fundamental level of a "raw" signal stimulating the senses. Therefore, all human experience with communication comes down to a change from one mental or perceptual state to another.

What is a reaction path? It is the "story" of a message passing from sender to receiver, and a model of communication that includes the variable of time. One is in STATE A in the beginning of a communication experience, and in STATE B at the end. Professional Communicators design messages and experiences that govern and record a receiver's passage from one state to another.

If all communication is essentially storytelling, a movement from beginnings to ends, then a reaction path is a visual representation of four common types of stories.

THE DESIGN PATH – the most direct path between state A and state B with no deviations. The "if-then" relationship: "if you start at A, then you will end up at B." It also represents induction: A is the specific case that proves or demonstrates the general conclusion B.

THE ART PATH – the indirect movement between state A and state B, based on proximity and implication instead of direct connection. One begins in a state that evokes or represents A, and ends in a state that evokes or represents B.

THE ADVERTISING PATH – the hybrid or fusion of the design path and the art path. States A and B are definitely linked, but not necessarily by the most direct route.

THE SCIENTIFIC PATH – the movement from state A to B and back, where state B reinforces or justifies state A. It also represents deduction: State B is the generality that proves the hypothesis A.

5.8.1 The Design Path

The design path is the most direct, efficient movement from state A to state B with no deviations. Here we use the word design in the context of the Professional Communicator who is tasked with the problem delivering a specific message to a specific audience.

Saying nothing about the quality or success of the message, the design path represents idealized communication. Therefore, the simple stop sign, the magazine cover, and the roadside billboard are considered equivalent examples of design even though they serve different purposes. The design reaction path is visualized as a straight line between state A and state B, reflecting the Professional Communicator's desire to move the audience along the shortest possible conceptual distance.

EXERCISE (ACO 1.3, 2.1):

1 | Considering the channels of print, games, web and speech, Discuss which of them favors the design reaction path the most.

2 | Why is the design reaction path important to Professional Communicators? Discuss the reasons in terms of ENERGY and TIME.

3 | Considering the amount of competition in our communications landscapes, what is the potential weakness of the design path?

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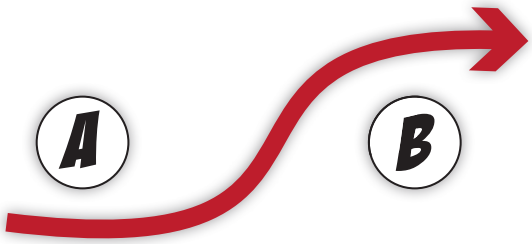
5.8 Reaction Paths–Art, Advertising

5.8.2 The Art Path

The art path is an indirect passage through the space defined by states A and B instead of a direct link between them. A work of art doesn't end or resolve in the same way that a design solution does. An artistic message constantly opens to new interpretation or deeper absorption, never really coming to a conclusion. The curving arrow passes near states A and B, while starting and ending somewhere beyond them both, to represent this lack of resolution.



Because the contemporary artist does not necessarily anticipate the audience's initial or ending states of mind, art can be considered the complementary opposite of design. Art does not "solve a problem" in the audience's world, unlike a hand tool, user interface, or CD cover. As the audience contemplates an artwork, they are not changed in the same way that professional communication changes them.

The art path says nothing about the quality of the artwork or its content. Unlike design, the problem explored by the artist isn't necessarily solved by the work itself. In art, the problem lies in the "human condition," or universal issues of life, death, joy, loss, grief, triumph and failure. Professional Communicators sample these issues to craft their messages, and thereby connect with an audience by evoking "real life" in their advertising stories.

EXERCISES (ACO 1.3, 2.1):

1 | Identify and discuss examples of communication using art reaction paths in each of the following channels: fashion, music, graphics, and the print. Do any of these channels favor the art reaction path in particular? Why or why not?

2 | Why is the art reaction path important to Professional Communicators? Discuss the reasons in terms of ENERGY and TIME.

3 | Considering the amount of competition in our communications landscapes, what is the potential weakness of sending messages along an art reaction path?

5.8.3 The Advertising Path

The advertising reaction path borrows qualities from the reaction paths for design and art. An advertisement uses artistic expressions such as powerful images, dramatic music, and engaging graphics.

At the same time, the purpose of sending an ad is to sell a product, or in the very least occupy a part of the receiver's thoughts for later consideration. So an ad is a union of direct and indirect reaction paths, represented by the loop that connects states A and B. Strong

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5.8.4 The Scientific Path

advertising leads people between states in such a way that following the indirect section of the path is an enjoyable aspect of the overall experience.

The advertising path has borrowed so heavily from the fine arts that many professionals and media theorists argue that it has become an art form in itself. In the series of stills from Chrysler's "Made In Detroit" 2011 Superbowl spot pictured above there are many powerful images that have nothing to do with the car itself. Instead these images attempt to evoke the spirit of Detroit. By themselves they accomplish little in the service of the Chrysler brand, but when presented in an intentional narrative sequence their meaning begins to accumulate in the mind of the viewer.

EXERCISE (ACO 1.3, 2.1):

1 | Generally speaking, advertising is a popular mode of communication. Its success is based on more than repetition and familiarity. Discuss why advertising is so successful in contemporary communications landscapes.

2 | Identify and discuss advertisements that you enjoy but feature products that you would not consider actually buying. Locate the "loop" in the ad that captures your attention even though arriving at point B doesn't mean anything to you.

3 | Identify and discuss an advertisement that you can't stand but nevertheless promotes a product that you buy regularly. Discuss why some products are popular in spite of bad or uninspiring advertising. This discussion is a gateway to distinguishing between products we need versus products we want, which can lead to a general discussion of economics.

5.8.4 The Scientific Path

The scientific reaction path is based on the display of data, implying or representing the fact that taking measurements or sampling generated the message. The path's U-turn represents this sampling action, the journey from the hypothetical state of mind (A) to the data gathering state (B) and back. Like the other reaction paths, the shape says nothing about the quality or accuracy of the data, or anything about the way that it was obtained.

Communications that make use of the scientific reaction path typically convey a sense of authority, objectivity, accuracy or neutrality. By using the aesthetic of graphs, measurement, numbers, and grid motifs for example, the message borrows from the "spirit" of the scientific method. This is why the statistical statement "4 out of 5 dentists agree..." carries intuitive weight even though the commercials that use it offer no proof or evidence to back the assertion.

The receiver of the message is nevertheless encouraged to identify with the rationality and logic of science. When technical imagery is used in commercial communication: sonograms, x-rays, astronomical images, scientific symbols, graphs, and renderings of molecules, the receiver of the message is invited to share in the power of the scientific worldview.

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5.9.0 Space And Time

EXERCISE: (ACO 1.3, 2.1)

1 | Identify and discuss advertisements that use the scientific reaction path. In particular, identify the hypothesis that the ad implies (what is the problem or experiment?) and what data it is working with.

2 | Identify and discuss advertisements that could benefit from using a scientific reaction path but don't.

3 | Identify and discuss advertisements that deceive through the use of a scientific reaction path.

5.9.0 Space And Time

In communication, it always takes time to cross the distance between any two points. It also always takes time to process a message, to move from interest to action. Just because the Internet facilitates the immediate distribution of information doesn't mean that the reactions to that information occur at the same pace–as you read this, a five year old YouTube video with five million+ views is being viewed and reacted to for the very first time. The converse is also true: the spread of "information wildfires" or content that "goes viral" does not guarantee that those who receive or spread it actually take the time to fully engage the message.

Differences in location, time, and processing ability are the three fundamental factors that generate diversity in an audience (*see Chapter 3: Mediation, sections 3.7-3.10 for a detailed exploration of audiences; see also Chapter 1: Communication, Bodies, And Energy, section 1.2 for a discussion of repetition, duration, and intensity*). Though solving problems of communication always involves trade-offs between these factors of space and time, the Professional Communicator who underestimates the importance of any one of them risks failing in the delivery of her message.

In the early days of commercial communication (the 1800s in the mainland United States), messages could take months to create, deliver, process and be reacted to. Early Sears & Roebuck catalogs packed with black and white images of products worked on such long time scales. The new catalog might arrive in some small town once a year, people would save money to purchase a product, send in the order, and wait months before it was delivered... and people didn't really complain. Why? Because if you lived in a town that simply didn't carry musical instruments, being able to order one by mail was a kind of miracle! Even in the 1970's and 1980's it wasn't odd to wait "six to eight weeks" for delivery of a product one ordered through an 800 number on television. Today we go to websites like Amazon.com on a whim or impulse, click a few buttons, and (generally speaking) within days our products arrive at our doorsteps. Days. In the world of digital products (apps, music, movies, etc.) the delay can be hours or minutes.

Getting to this point has everything to do with truly world-changing technological and organizational advances, from railroads to airplanes, bookkeeping techniques, warehouses and databases; computers, satellites and submarine cables; not to mention personal credit and turning money from something that was once backed by an actual amount of gold into purely electronic signals.

In the early stages of this development, production and distribution capacities for goods easily exceeded the rates of their consumption. There was more stuff being made than there were people to buy and use it. But the systems of mass production had far too much momentum to alter themselves, too much investment, too much risk spread out among different investors, for them to be slowed down.

So what happened? Early Professional Communicators decided to increase demand for goods, even it meant generating or stimulating desire and anticipation for them. Today's Professional Communicators

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5.9.0 Space And Time

are no different, and their tools for targeting populations of potential consumers are incredibly powerful–especially since people willingly give over their demographic data to various massive databases.

For Professional Communicators the 19th century born crisis of production is no longer about matching desire with high rates of output. The 21st century's crisis is one of attention, memory and processing. There are far too many competing messages, arriving continuously and at incredibly high frequencies, for the average consumer to process. Typical receivers don't have enough time to process every message they receive, let alone judge it and come to a decision. The Professional Communicator now has to not only manage the time it takes to deliver a message, but the time it takes for it to be reacted to and acted on.

Even those messages that feel as if they are "instant" are actually based on the intimate relationships between receivers and their memories. Because we all assume that our memories are perfect, we trust them, and the time required to recall them in the service of a moment of judgment is effectively zero.

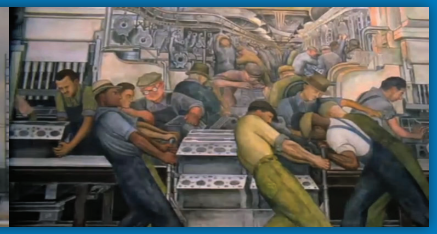
Professional Communicators are in the business of crafting messages that function as memories, that slip past our judgment in such a way that receivers feel as if they have always known or understood them.

PRODUCTION EXERCISE

"Video Deconstruction – Actual vs. Virtual"
5.8.0 Reaction Paths
Case Study
ACO 1.0, 2.0, 5.0

Detailed exploration of the CA concept of a reaction path through a case study of Chrysler's 2011 Superbowl ad. Particular attention is paid to the difference between images as they are used in the commercial and histories that may challenge or contradict that usage.

DOWNLOAD: creativityacademies.com/5.8.0-01.pdf



Conclusion And Opening

One cannot really conclude a project like this. Every chapter could be argued over, further subdivided, deepened or enhanced in many ways. Hopefully the reader has found ample opportunities and points of inspiration to do any and all of those things.

If this Curriculum Guide has done its job, the reader has had many moments of recognition: points where she or he was struck with the familiar, with an amplification of something already known. Such an experience is the essence of education.

Consider this "conclusion" as more of an opening, a beginning, a constellation of inspirations meant to encourage the reader to make a deep and thorough exploration of their own communications landscapes. It is hoped that readers get more than a set of exercises and standards out of this Guide. Rather, readers should grapple with a little bit of the future being largely defined by corporations, programmers, designers, artists, and thinkers located primarily on the US Mainland.

Though the production tools and entry level professional standards required for the near future are evenly distributed, Hawai'i is not Hollywood and it is not Silicon Valley. Despite the superficial cultural effects of the "global village," Hawai'i's history, and therefore its priorities, are completely different.

Hawai'i-as-client needs as many stories–as many instances of communication–about possible futures as there are people who can record, design, repeat or deliver them. Hawai'i-as-client does not need *audiovisual rhetoric* about its crises in transportation, housing, agriculture, social services, and indigenous Hawaiian rights. Though definitely useful, Hawai'i as-client needs more than information design for statistics and history. It needs detailed (and wherever possible interactive) multimedia epics packed with grim and humorous details of failure and success, heroes and demagogues, swindlers and saints, crusaders and indigents, cursed and blessed alike. It needs action and drama set pieces that take place among the mountain top telescopes, in the alleys of Kalihi, in the housing projects of downtown Honolulu, the organic farms of Waimanalo, and the bombing ranges of the Big Island.

Fortunately all these characters and locales already exist, larger than life, and are waiting for a touch of fiction (stunning animation, drawings, comics, graphs, models, flowcharts) that will flood the popular imagination via channels other than the television and print news. Hawai'i-as-client wants stories of possible futures streamed or QR-coded into the middle of an everyday life characterized by tweets, link sharing, video browsing, status updates and the constant desire to click "like."

Hawai'i has an existing population of artists, writers of novels and plays, activists, scientists, entrepreneurs, politicians, musicians and community leaders that can provide an infinite amount of source material, inspiration, and data.

Fortunately, the CTE Arts and Communication pathway is primed to point students in this direction. Its comprehensive curriculum is reality- and industry-based. What Creativity Academies has attempted to provide is a broader perspective that unites its content by directing teachers' thoughts forward and around the corner.

The seeds of the Professional Communicator class are already in the requirements. This is why the meta-, future-based view that C&A+CA offers is potentially a game-changer. This Guide presents a basic framework for fluid, interdisciplinary thinking based on the media they engage on an everyday basis.