

Introducing Scalar: Designs for Innovation

Reimagining the Archive / UCLA / November 13, 2010

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Scalar

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Scalar multiplication

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(December 2009)

In **mathematics**, **scalar multiplication** is one of the basic operations defining a **vector space** in **linear algebra** (or more generally, a **module** in **abstract algebra**). In an **inner product** geometrical context, scalar multiplication of a **real Euclidean vector** by a positive number multiplies the magnitude of the vector without changing its direction. The "scalar" itself derives from this usage: **a scalar is that which scales vectors**. Scalar multiplication is different from the **scalar product**, which is an **inner product** between vectors.

Definition

In general, if K is a **field** and V is a vector space over K , then scalar multiplication is a **function** from $K \times V$ to V . The result of applying this function to c in K and \mathbf{v} in V is denoted $c\mathbf{v}$.

Scalar multiplication obeys the following rules (*vector in **boldface***):

- Left **distributivity**: $(c + d)\mathbf{v} = c\mathbf{v} + d\mathbf{v}$;
- Right distributivity: $c(\mathbf{v} + \mathbf{w}) = c\mathbf{v} + c\mathbf{w}$;
- **Associativity**: $(cd)\mathbf{v} = c(d\mathbf{v})$;
- Multiplying by 1 does not change a vector: $1\mathbf{v} = \mathbf{v}$;
- Multiplying by 0 gives the **null vector**: $0\mathbf{v} = \mathbf{0}$;
- Multiplying by -1 gives the **additive inverse**: $(-1)\mathbf{v} = -\mathbf{v}$.

Here $+$ is **addition** either in the field or in the vector space, as appropriate; and 0 is the additive identity in either. Juxtaposition indicates either scalar multiplication or the **multiplication** operation in the field.

Scalar multiplication may be viewed as an **external binary operation** or as an **action** of the field on the vector space. A **geometric** interpretation to **scalar multiplication** is stretching or shrinking of a vector.

As a special case, V may be taken to be K itself and scalar multiplication may then be taken to be simply the multiplication in the field. When V is K^n , then scalar multiplication is defined **component-wise**.

The same idea goes through with no change if K is a **commutative ring** and V is

Anatomy of a Scalar Book



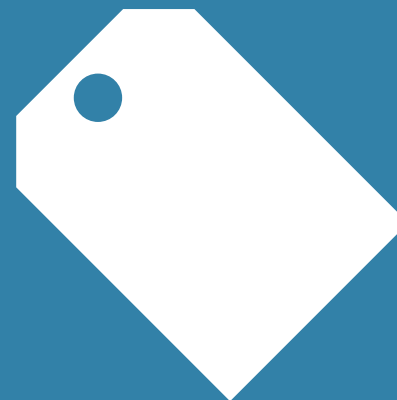
Pages



Media

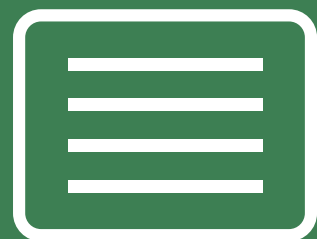


Paths



Tags

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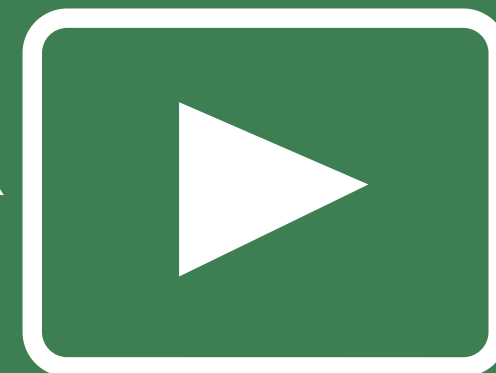
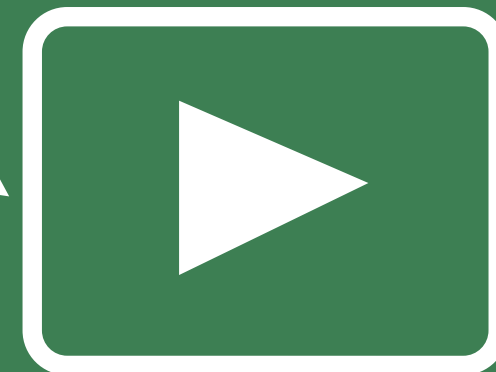
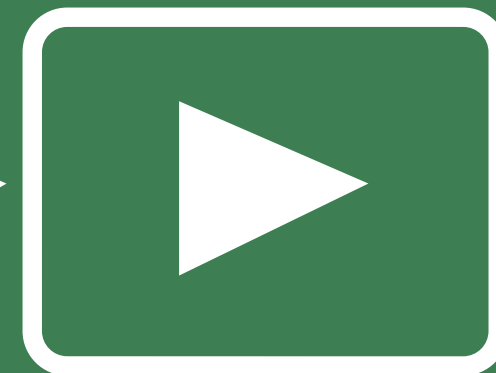


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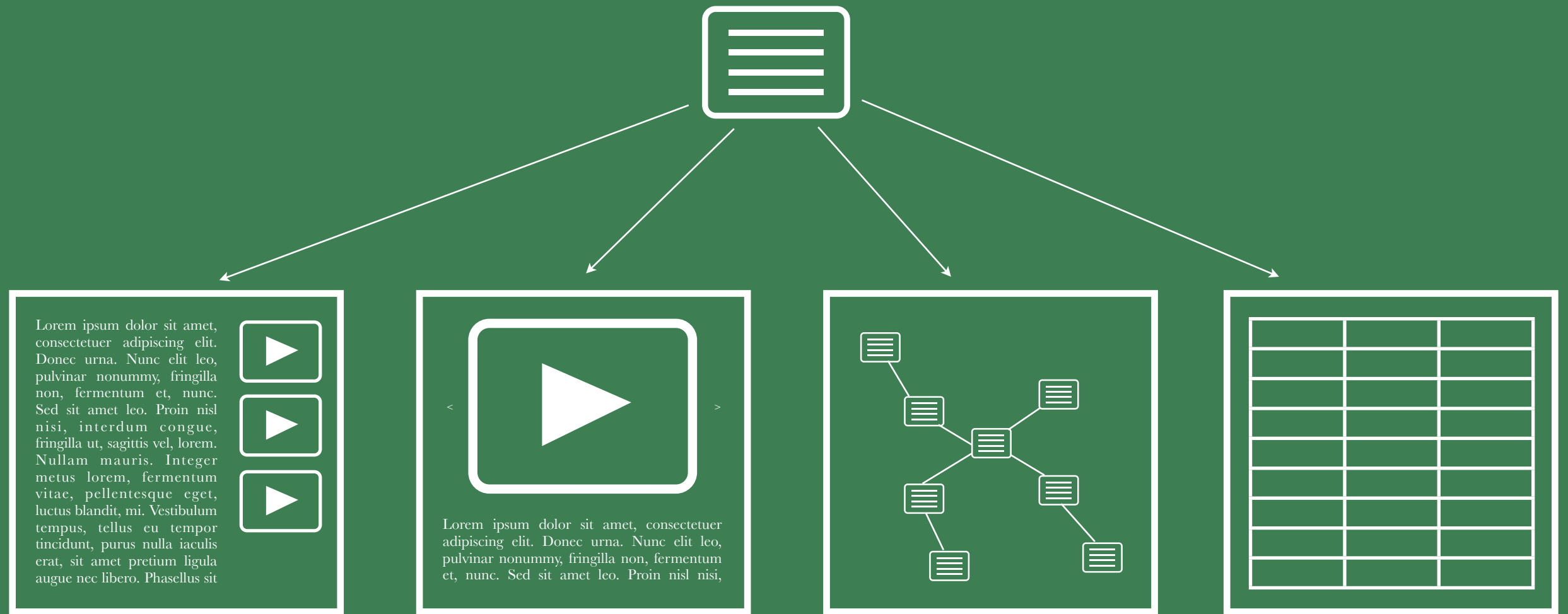


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Views



Text

Media

Graph

Grid

and more...

Hemispheric Digital Constellations: Tracing Performing Bodies in the Americas

Marcela Fuentes, Author
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Begin path ▶



Hemispheric Digital Constellations

Contains 5 resources

Picture this: Activists from all over the world, who have never met in person, gather at the website of the Mexican government for a [virtual sit-in](#) organized by the [Electronic Disturbance Theater](#) to support the indigenous Zapatista rebellion.

Or this: A group of [outraged New Yorkers](#) denounces pervasive surveillance by performing mute versions of classics such as *Waiting for Godot* and [1984](#) in front of surveillance cameras in subway stations.

Or, in San Diego, a program developer cracks a Motorola phone turning it into a basic GPS that is part of a [media arts piece](#) engaging [border politics](#).

Or, the case of Cuban-American performance artist Coco Fusco, who reenacts a real-life episode of labor abuse involving a [maquiladora](#) (assembly line factory) worker [for online viewers](#).

This digital book explores practices of performance in which, artists and activists in the Americas use symbolic action as a means to intervene in conflict scenarios informed by failing states and [virtual economies](#). The performances that are surveyed here rely on different platforms—the Internet, mass media, the street, and theatre—to bring awareness to the effects of [neoliberalism](#) and neoconservatism in the region.

The peculiarity of these performances resides in a creative and disruptive use of media and space to produce what I call "embodied action as [event](#)," a specific disruption of the laws that script bodily behavior in a given space, where the body is supposedly excluded (as in the case of electronic media) or where it is contained by laws of civility (as in public space.) Performance is thus conceived as the manifestation of a certain expressivity through which participants act upon the conditions of use of media and space to give visibility to a conflict. Performance as

Electronic Disturbance Theater, Virtual



Maximize

Surveillance Camera Players, Nineteen



Maximize



1 of 4



6 paths

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We Are All Children of Algeria

Nicholas Mirzoeff, Author
Live

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[Main Route](#), page 2 of 10 in path
[Demonstrating the demonstration](#), page 1 of 3 in path

[Next on path](#) 
[Next on path](#) 



Meeting Point

Meeting Point visual



[Maximize](#)

[video](#)



This is the Meeting Point

This is a demonstration of the theme: "We Are All Children of Algeria," a project created for the NEH-Vectors Summer Institute "Broadening the Digital Humanities" at UCHRI in 2010. I explain the goals of the project in the  [video](#).

The project can be followed along the [main route](#) of the [demonstration](#), or you can explore the feeder marches, and either get lost or end up back with the main crowd.





Third Cinema and the Promise of Digital Media

Kara Keeling, Author

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Introduction to Third Cinema and the Promise of
Digital Media, page 3 of 3 in path

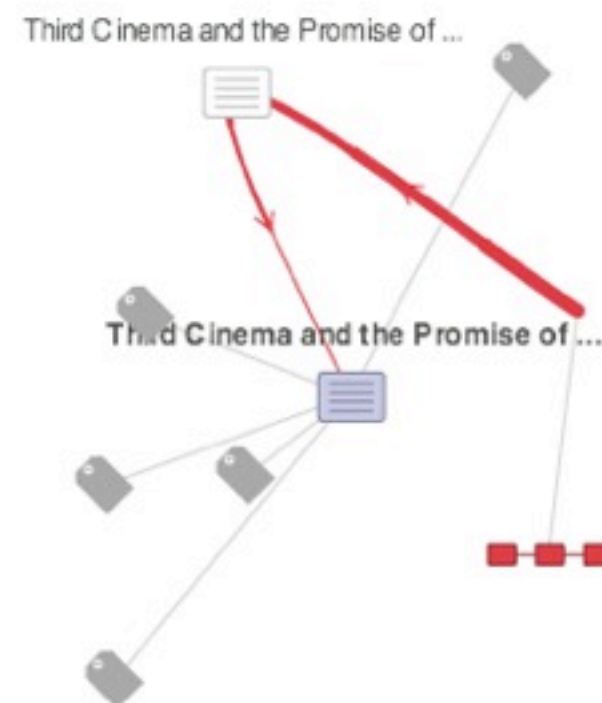
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Third Cinema and the Promise of Digital Media: Overview

Content type: page ▼

Third Cinema and the Promise of Digital Media: Overv ▼

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This project consists of 5 main paths. Some of those paths contain paths.

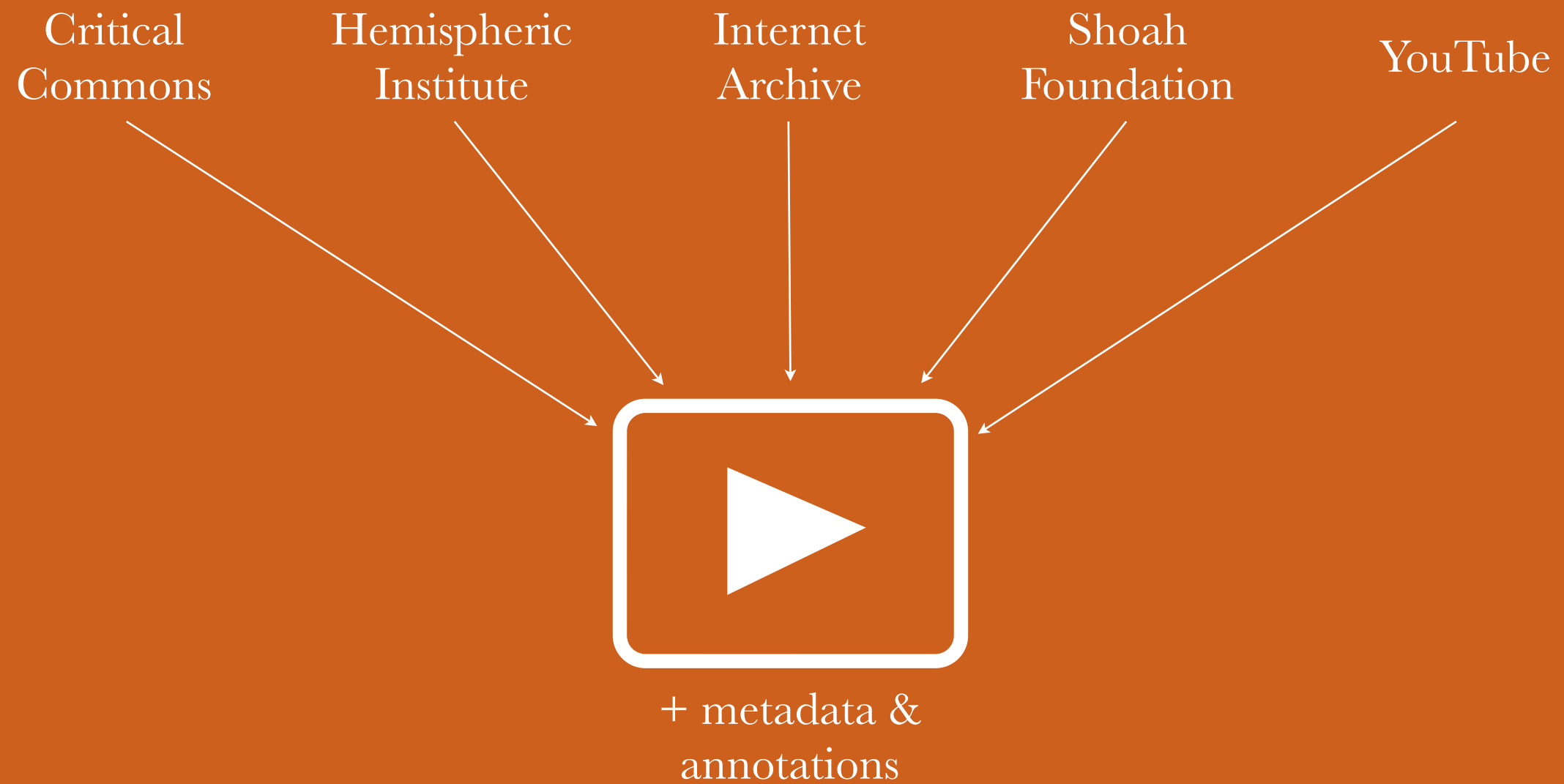
Looking at the current page in "graph view," the default view for this page, gives you a graphic representation of the pages, paths, and tags included in this page. Clicking on any of these elements of the project reveals their connections to the paths, pages, tags, media files, notes, and commentary included in the entire project. Though not the default view for most pages, graph view can be displayed by

14 paths

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1948	OPERATION SANDSTONE											
1948	EG&G IN OPERATION SANDSTONE											
1948	U.S. AIR FORCE PARTICIPATION IN OPERATION SANDSTONE											
1948	U.S. ARMY ENGINEERS ON OPERATION SANDSTONE											
1948	BLAST MEASUREMENTS GROUP IN OPERATION SANDSTONE											
1948	NAVY'S PART IN OPERATION SANDSTONE											
1951	OPERATION GREENHOUSE											
1951	OPERATION BUSTER/JANGLE											
1951	EXERCISE DESERT ROCK											
1952	OPERATION TUMBLER/SNAPPER											
1952	OPERATION IVY											
1952	OPERATION DOORSTEP (10:00) AND OPERATION CUE (16:00)											
1953	OPERATION UPSHOT-KNOTHOLE											
1953	OPERATION UPSHOT-KNOTHOLE, PROJECT 5.2, ATOMIC WEAPONS EFFECTS ON B-50 AIRCRAFT											
1954	OPERATION CASTLE											
1955	OPERATION TEAPOT, MILITARY EFFECTS STUDIES											
1955	OPERATION WIGWAM, COMMANDER'S REPORT											
1955	ARMED FORCES SPECIAL WEAPONS PROJECT PRESENTS ATOMIC GUIDED MISSILES											
1955	OPERATION TEAPOT - MILITARY EFFECTS STUDIES											
1956	OPERATION REDWING											
1956	MILITARY EFFECTS ON OPERATION REDWING											
1957	OPERATION PLUMBBOB											
1957	OPERATION PLUMBBOB, MILITARY EFFECTS STUDIES											
1958	OPERATION HARDTACK, MILITARY EFFECTS STUDIES, PART ONE - BASIC EFFECTS, STRUCTURES AND MATERIEL (Operation Hardtack I)											
	OPERATION HARDTACK, MILITARY EFFECTS STUDIES											

Media





search

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Critical Commons

Hemispheric Institute

Internet Archive

manage

Scalar Guide

Craig Dietrich and Erik Loyer, Authors

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Internet Archive

The Internet Archive is a non-profit digital library with the stated mission: "universal access to all knowledge." It offers permanent storage and access to collections of digitized materials, including websites, music, moving images, and books. The Internet Archive was founded by Brewster Kahle in 1996. (From Wikipedia)

Simple search

Native search

Scalar offers the ability to do simple keyword searches of this archive using the interface below. If you require more detail and control in your searches of this archive, click the Advanced Search tab above to see additional options.

Search

Search results

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Fifth Aussie UFO Podcast

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Dennis Kucinich's UFO Question

Dennis Kucinich answers UFO Question at Democratic debate

Internet Archive

View

Import selected



DOE.0800001 - Trinity 1945 / kham@illinois.edu

Hide Annotations



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0:00:13 - 0:00:51

The White Sands Proving Ground
"The range is located in the Tularosa Basin of south-central New Mexico. The headquarters area is 20 miles east of Las Cruces, New Mexico, and 45 miles north of El Paso, Texas. The range boundaries extend almost 100 miles north to south by 40 miles east to west. At almost 3,200 square miles the range is the largest military installation in the country." (http://www.wsmr.army.mil/wsmr.asp?pg=y&page=21) [More >](#)

0:00:51 - 0:03:23

The Tower
Trinity is famous as a demonstration of the power of atomic science, the product of the study of invisible, super-microscopic processes and phenomena. But it was just as much an exercise in large-scale civil and mechanical engineering. Mechanical science is the alter-ego of atomic science. [More >](#)

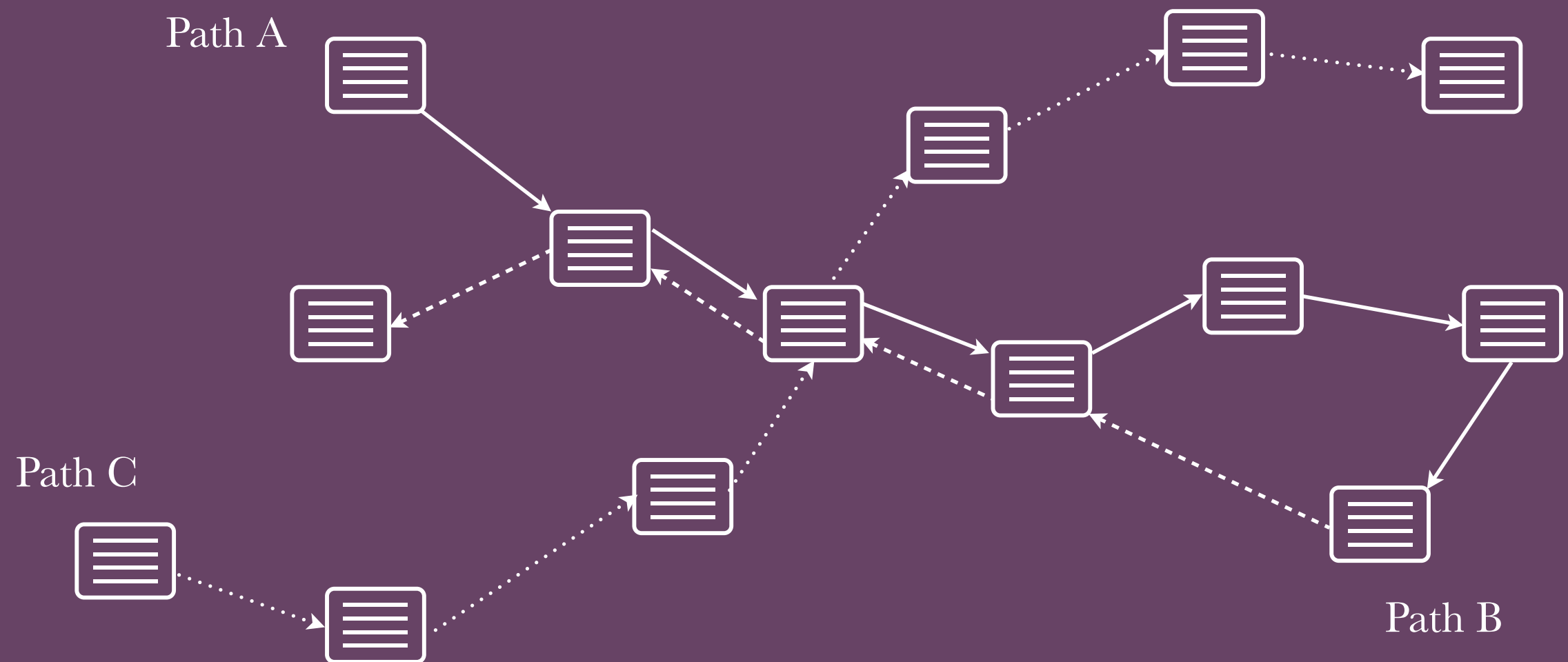
0:03:23 - 0:04:44

The Gadget
Indeed, the titular rhetoric of the test attests to the dialectic of old and new, big and small, the transcendent and mundane: "Trinity" was contained in "The Gadget." [More >](#)

0:00:13 The White Sands Proving Ground

Type	rdf:type	scalar:File
Title	dc:title	DOE.0800001 - Trinity 1945
Description	dcterms:description	This silent video shows the preliminary processes of raising the "Gadget" to the top of the tower, the final preparation for detonation, and the blast and after effects.
Contributor	dc:contributor	Kevin Hamilton and Ned O'Gorman

Paths





We Are All Children of Algeria

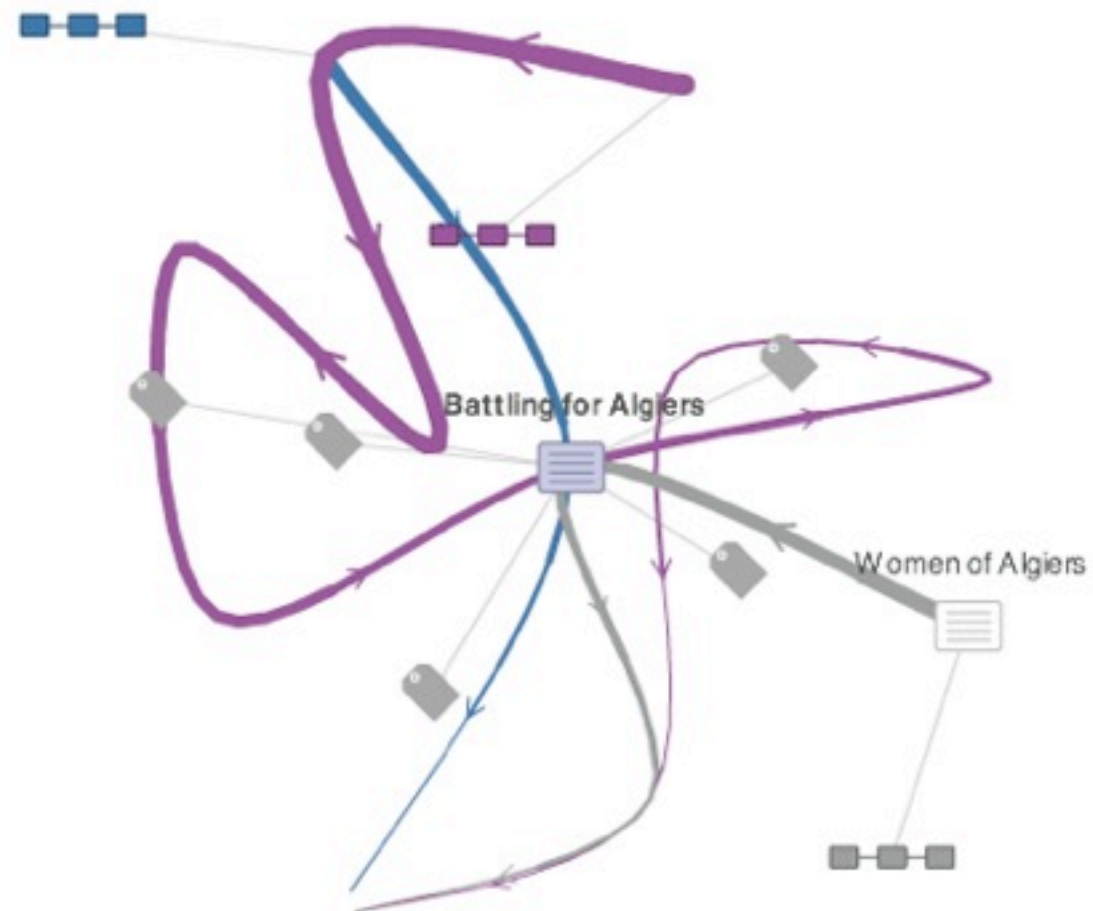
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Content type: **page**

Battling for Algiers

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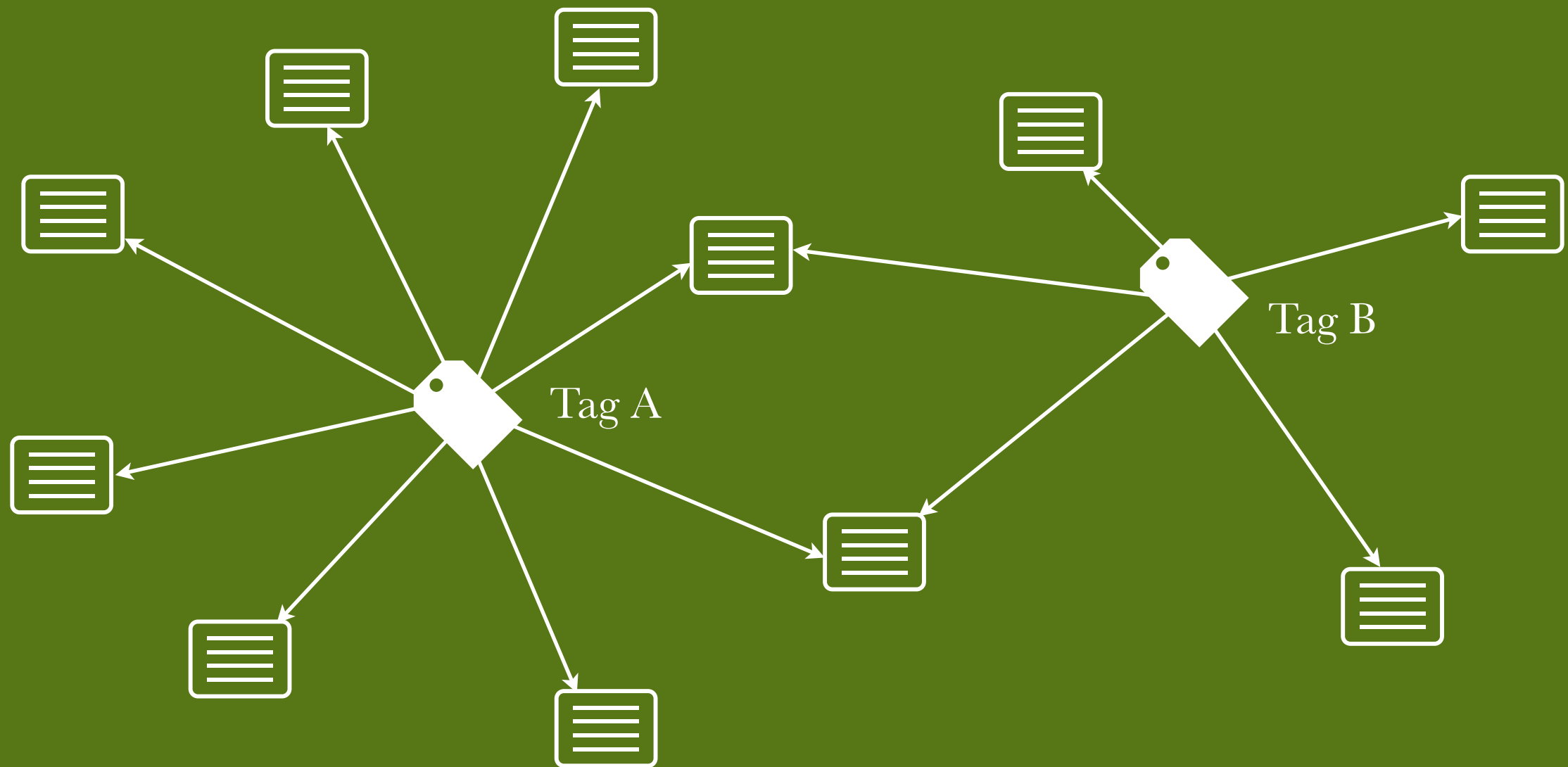


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We Are All Children of Algeria by Nicholas Mirzoeff.
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Tags



Hemispheric Digital Constellations: Tracing Performing Bodies in the Americas

Marcela Fuentes, Author
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Tags

spectacle poetic gesture hemispheric emergence performance art social ritual cultural agents resistance dematerialization taz situationism 404 file not found html conceptualism protocol demand justice rage stillness traffic jam minor transnationalism border thinking excess escrache do it yourself politics tactical media iterations humor theater of the oppressed state terrorism scandal alert memory violence ethics of spectatorship dirty war disappeared paranoia magical realism insurrection threat simulation awe immigration virtual sit in digital zapatismo electronic civil disobedience semantic efficacy middle class distress uncertainty destruction betrayal values mobility migration exile digital capitalism surveillance creole democracy impurity cleansing face to face locative media arts crowd sourcing border art solidarity compassion conceptual art controversial de tenuring naivete politics of the question patriotism terror fear displacement forgetting assimilation nn red disruption parody

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Hemispheric Digital Constellations: Tracing Performing Bodies in the Americas by Marcela Fuentes.

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