



Technical Interaction Analysis Framework

Science & Technology in Society
Session I, Panel B: Communities of Expertise
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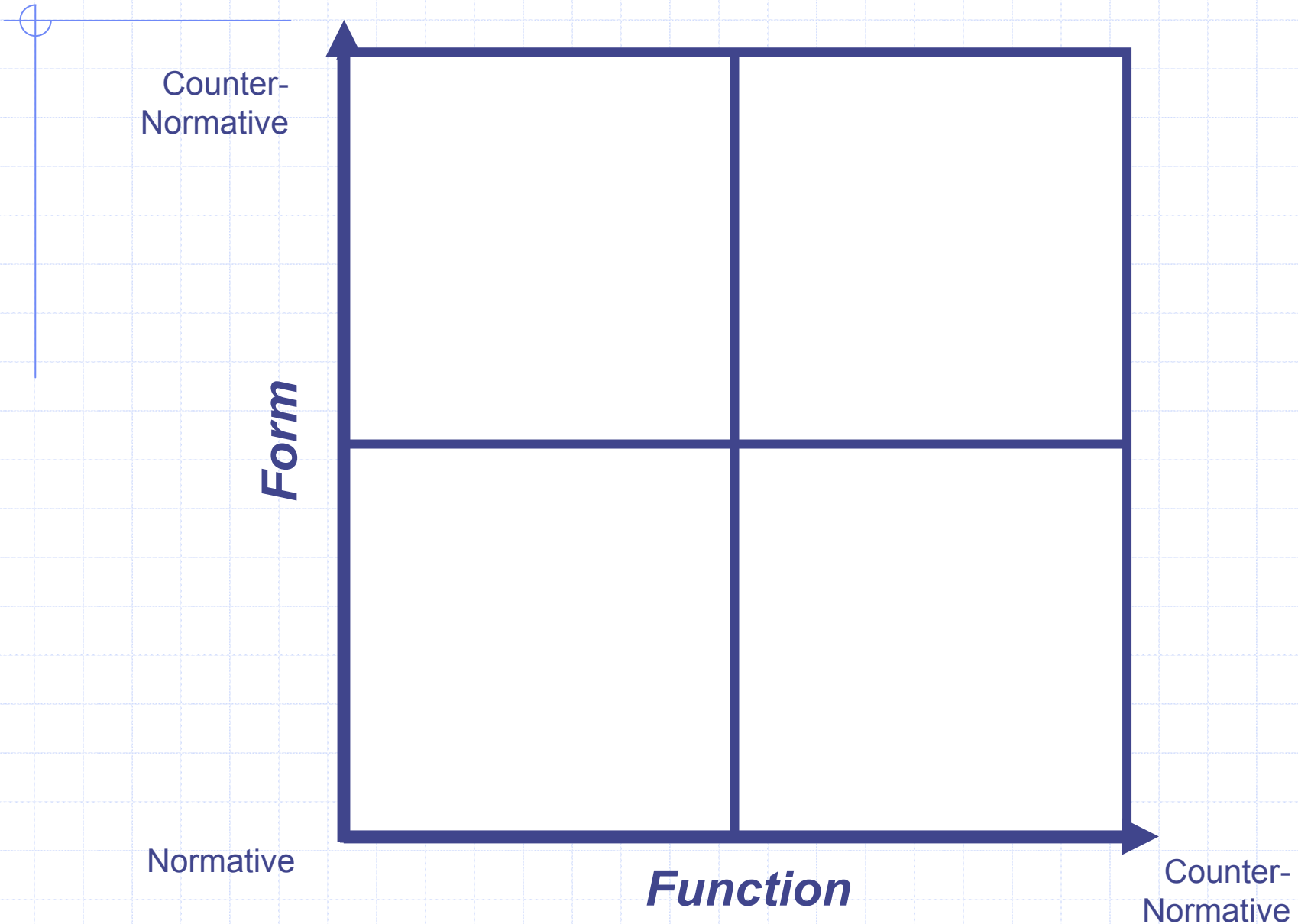
Key Project

- ◆ Generalized framework for analyzing “mundane” interactions within technical communities
 - Normatively identity-neutral interactions “hide” identity work
 - “Bad” interactions are simply “counter-normative”
 - Key to analysis is form and function on a scale
- ◆ Framework focuses on
 - Written interactions
 - A single genre / interaction event type at a time
- ◆ Emphasizes qualitative nature of differences

Analyzing the Events

- ◆ From & Function on a spectrum
 - “Normative” to “Counter-Normative”
 - ◆ Identity-work hidden at all points on the spectrum
 - Differs from “discourse”, “style”, and “genre”
- ◆ Form
 - Modes of expression
 - ◆ Genre / generic structures (e.g., “article”)
 - ◆ Grammatical forms (e.g., “interrogative” or “third person”)
 - ◆ Literary forms (e.g., “irony” or “sarcasm”)
 - ◆ Cultural references (e.g., *Hitchhiker’s Guide to the Universe*)
- ◆ Function
 - Relevance to the community’s normative goals for the discourse event
 - Relevance to immediate context
 - Appropriateness to immediate context

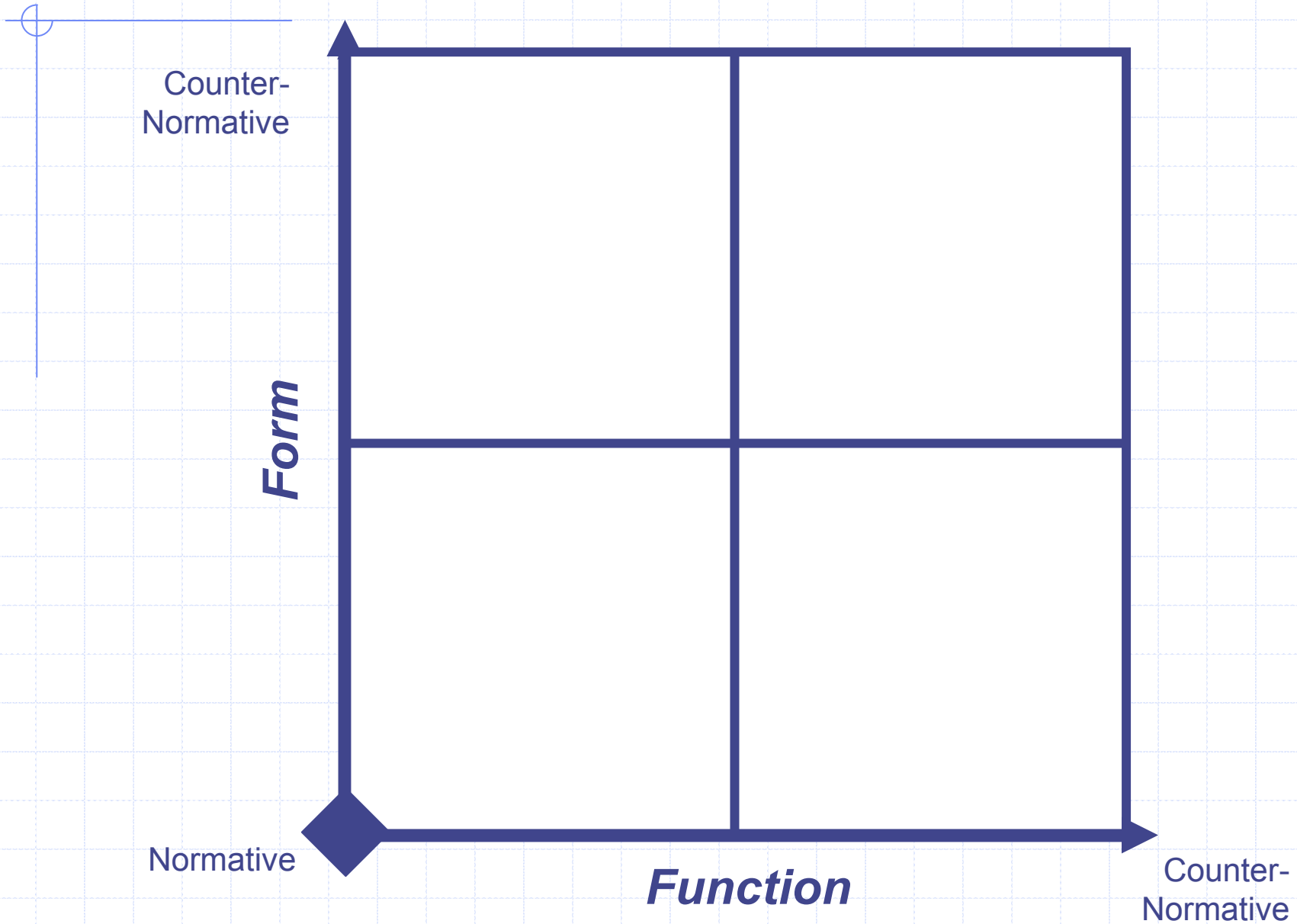
Visualizing Discourse Events



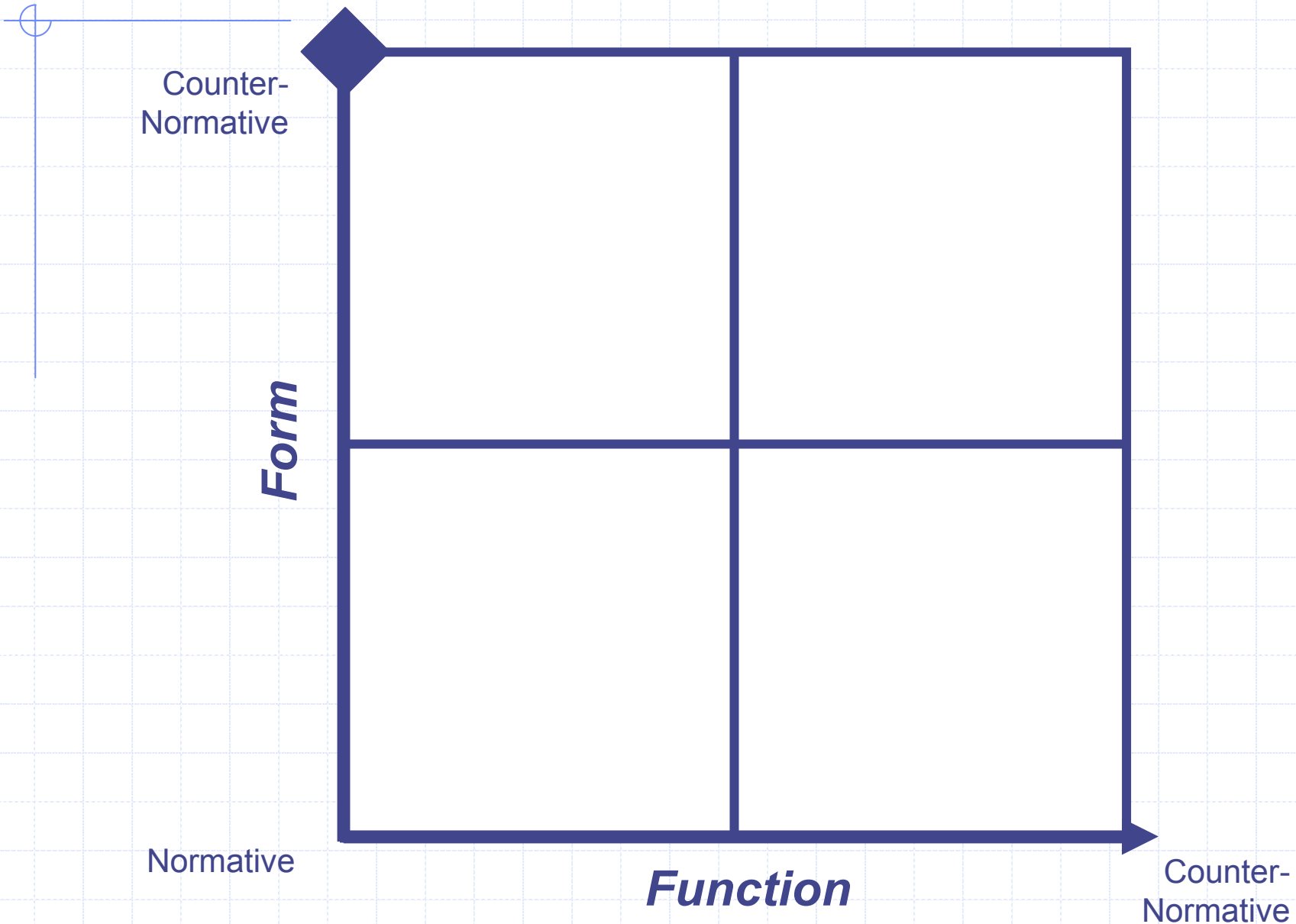
Case Studies

- ◆ Two interaction event types from Four sample sets
 - Comments in programming source code
 - ◆ Corporate critical application source code in COBOL
 - ◆ Linux kernel in C
 - Newsgroup posts on programming issues
 - ◆ comp.lang.c++
 - ◆ comp.lang.lisp
- ◆ Events are discrete
 - Single author
 - Limited “duration”
 - Recognizes the interconnectedness of all interactions
 - ◆ All interactions occur within contexts
 - Social
 - Technical
 - Others...

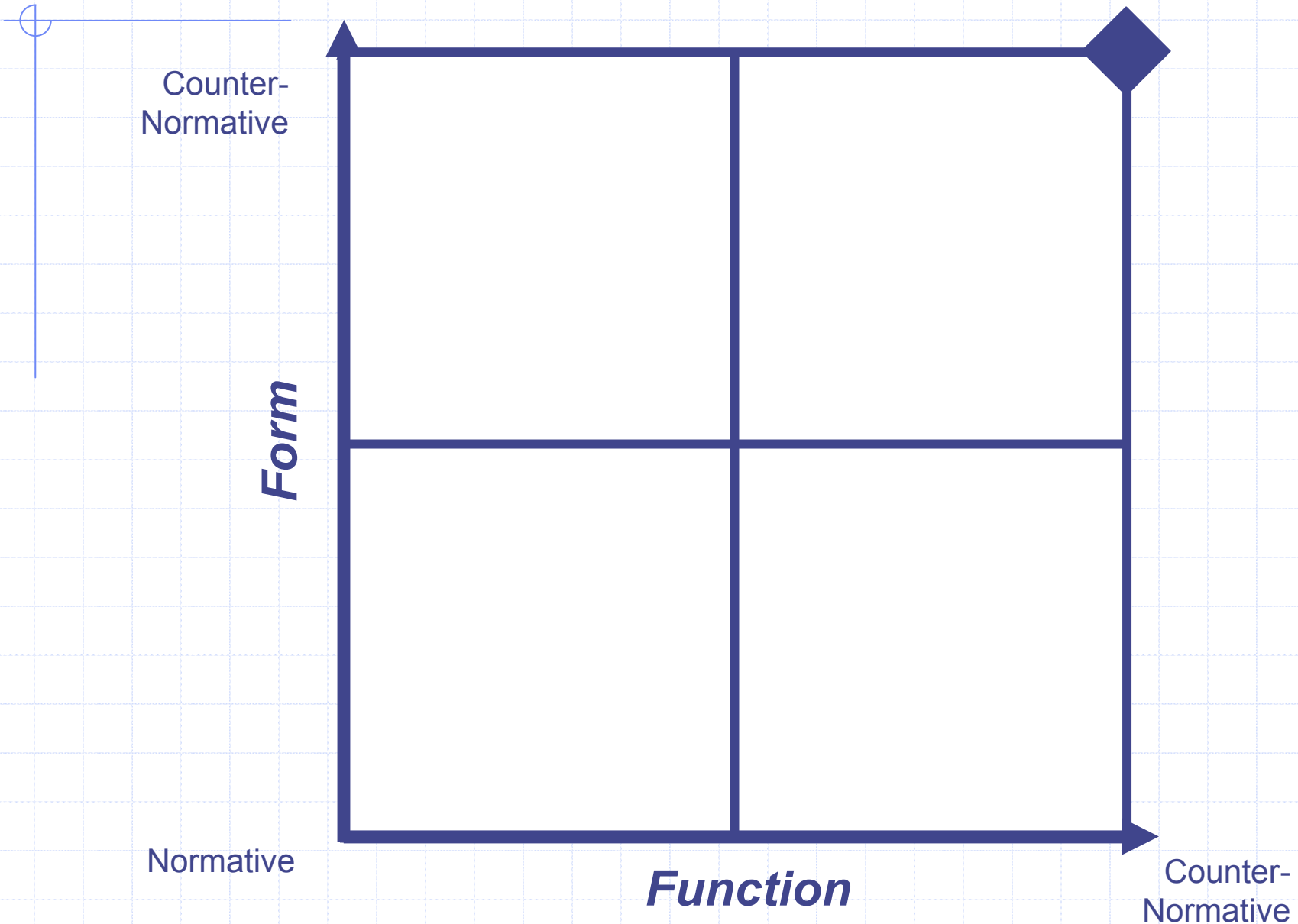
Fully Normative



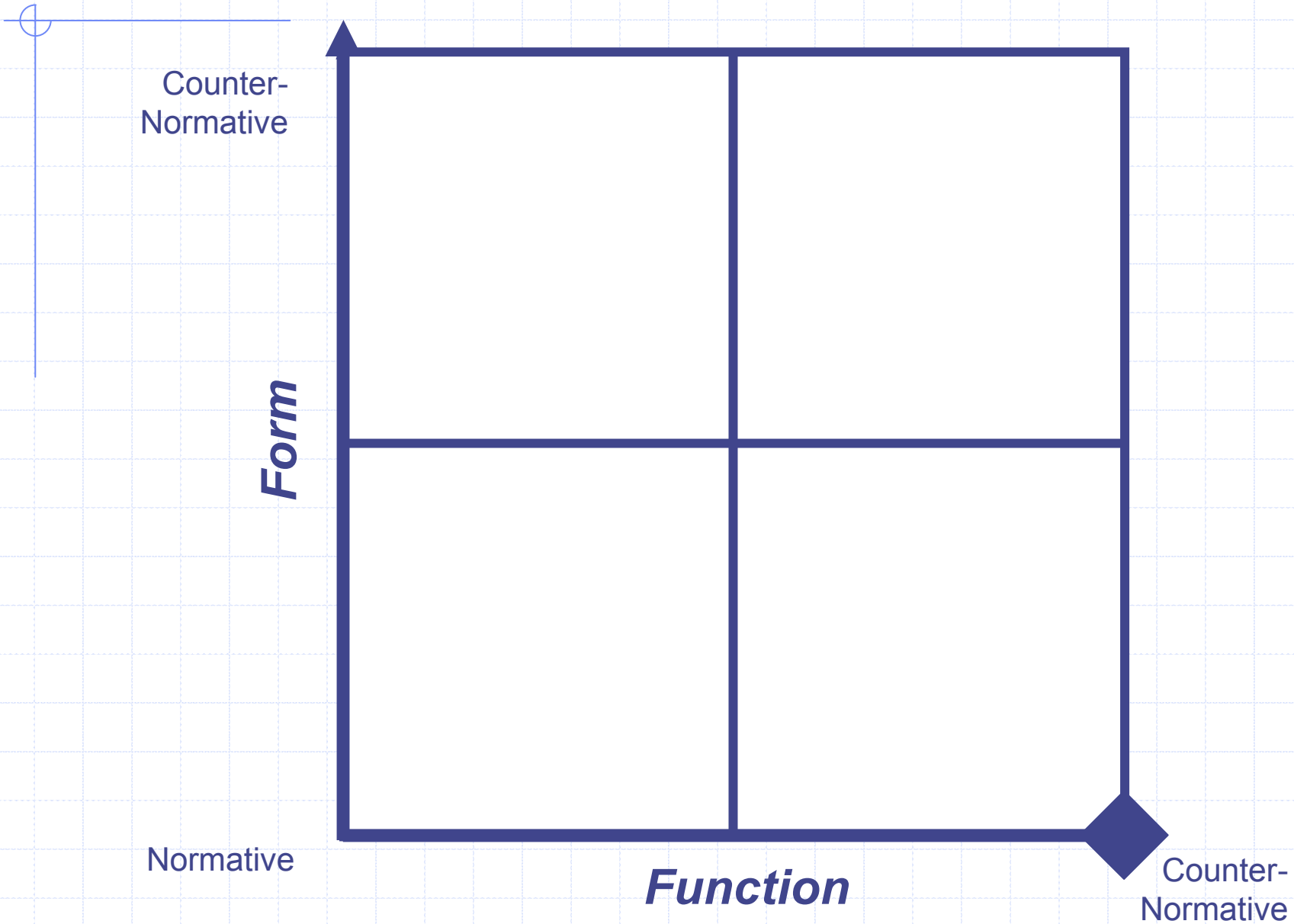
Counter-Normative Form



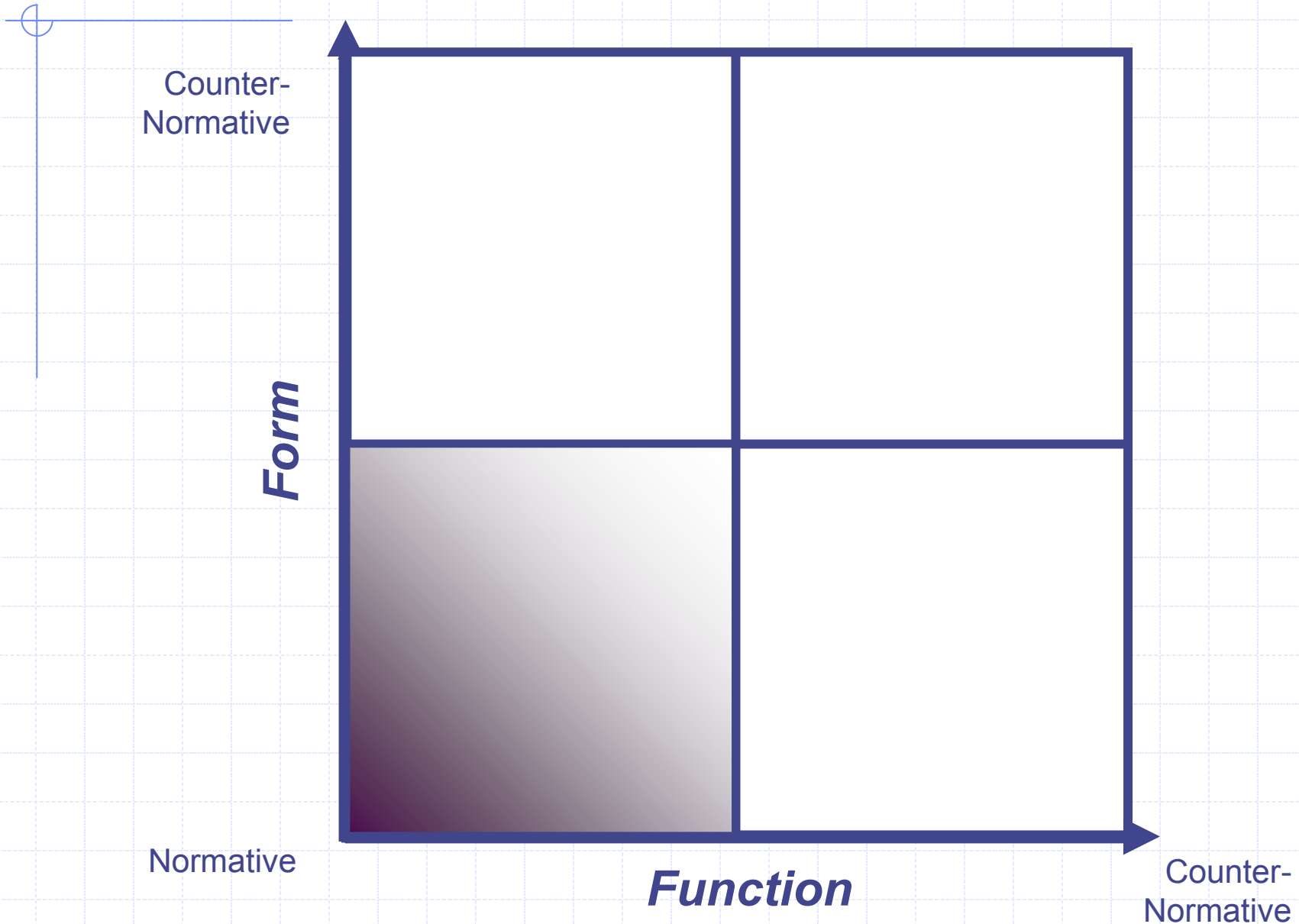
Fully Counter-Normative



Counter-Normative Function



The Serious Contributor



The Knowledgeable Sarcastic

Counter-Normative

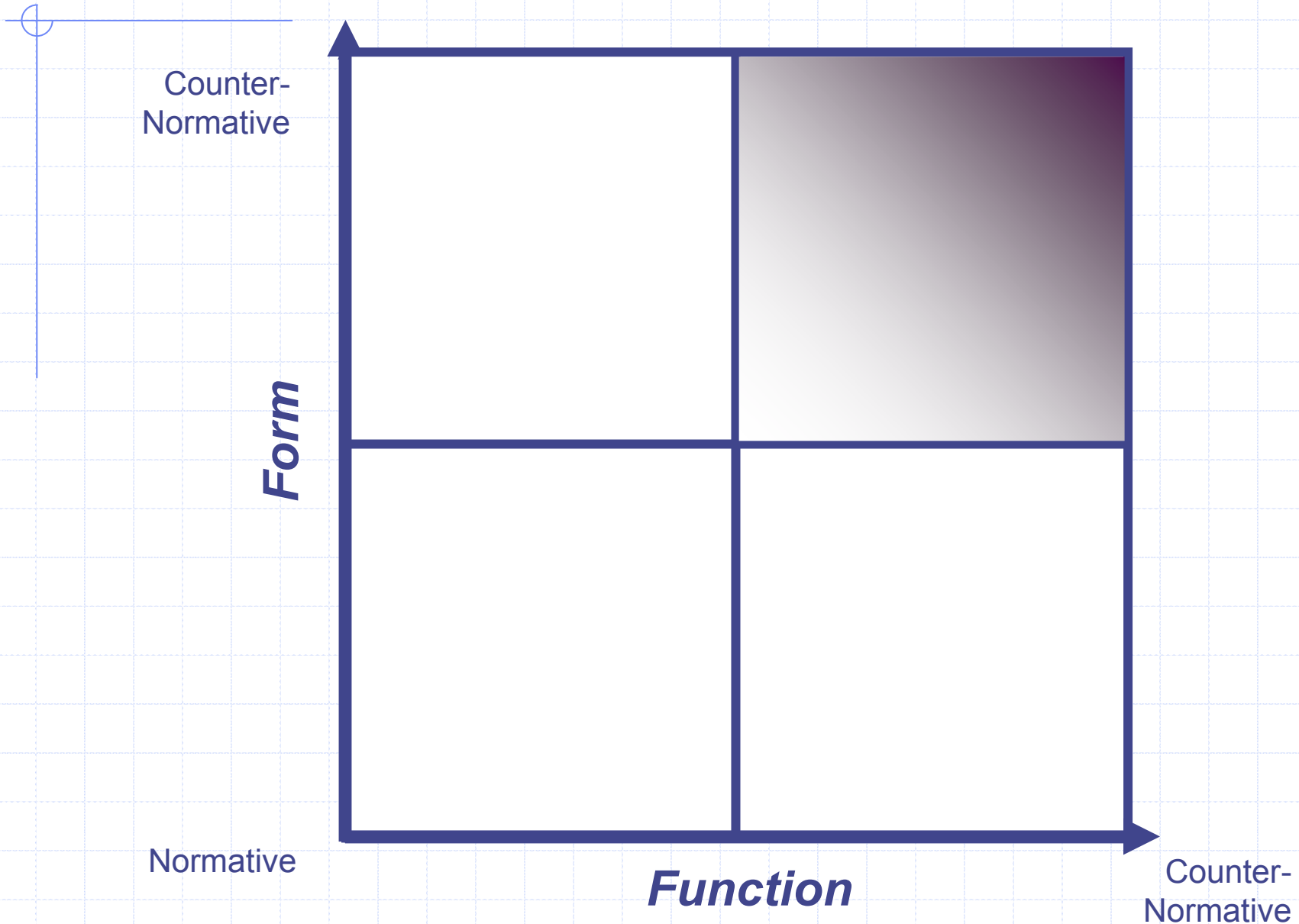
Form

Normative

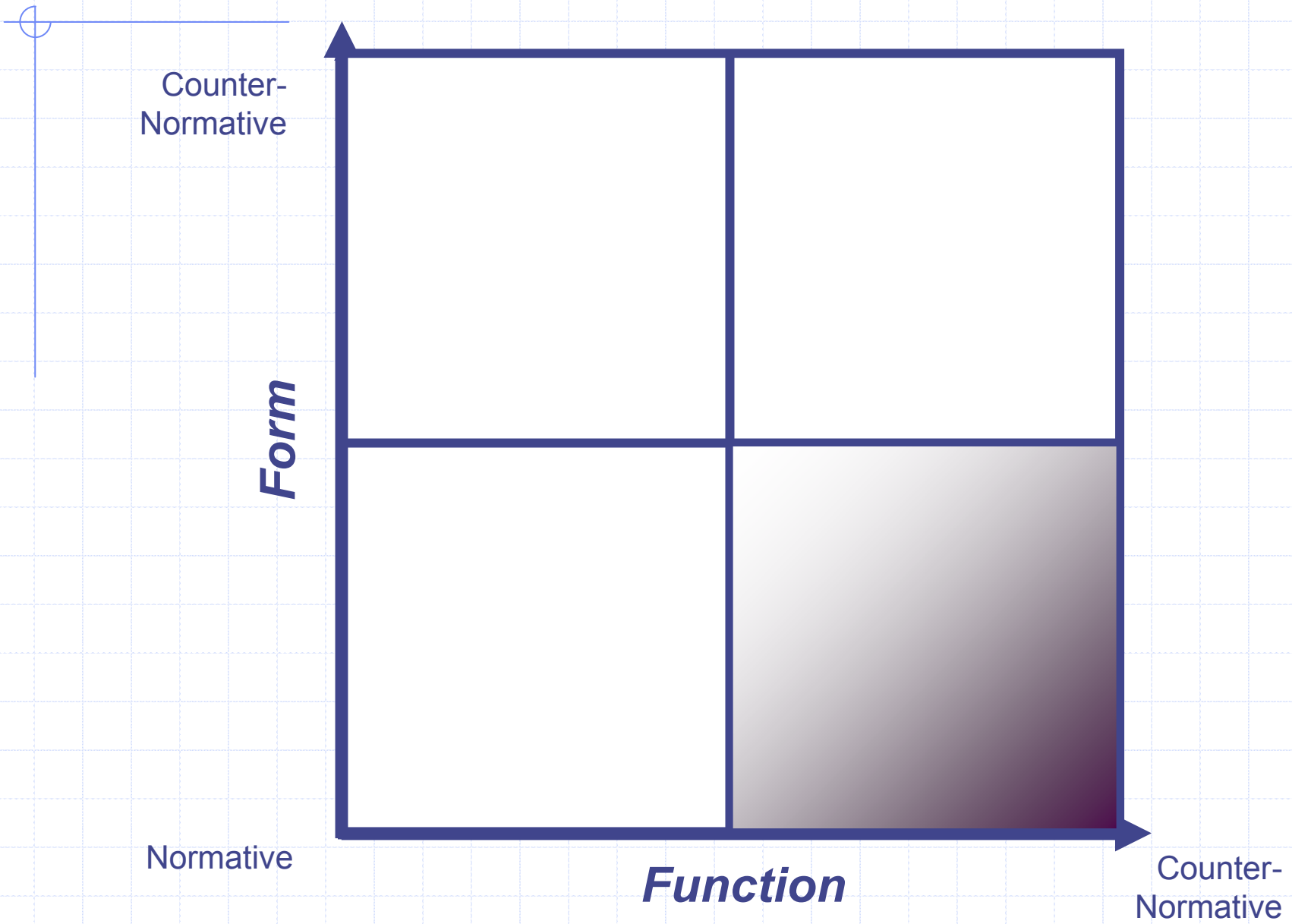
Function

Counter-Normative

The Off-topic Joker



The Killfile



It's a Plot...

form	counter-normative	0,8	1,8	2,8	3,8	4,8	5,8	6,8	7,8	8,8
		0,7	1,7	2,7	3,7	4,7	5,7	6,7	7,7	8,7
		0,6	1,6	2,6	3,6	4,6	5,6	6,6	7,6	8,6
		0,5	1,5	2,5	3,5	4,5	5,5	6,5	7,5	8,5
		0,4	1,4	2,4	3,4	4,4	5,4	6,4	7,4	8,4
	normative	0,3	1,3	2,3	3,3	4,3	5,3	6,3	7,3	8,3
		0,2	1,2	2,2	3,2	4,2	5,2	6,2	7,2	8,2
		0,1	1,1	2,1	3,1	4,1	5,1	6,1	7,1	8,1
		0,0	1,0	2,0	3,0	4,0	5,0	6,0	7,0	8,0
		normative					function	counter-normative		
	function									

#1 Contributor: comp.lang.c++

form	counter-normative	0,8	1,8	2,8	3,8	4,8	5,8	6,8	7,8	8,8
		0,7	1,7	2,7	3,7	4,7	5,7	6,7	7,7	8,7
		0,6	1,6	2,6	3,6	4,6	5,6	6,6	7,6	8,6
		0,5	1,5	2,5	3,5	4,5	5,5	6,5	7,5	8,5
		0,4	1,4	2,4	3,4	4,4	5,4	6,4	7,4	8,4
	normative	0,3	1,3	2,3	3,3	4,3	5,3	6,3	7,3	8,3
		0,2	1,2	2,2	3,2	4,2	5,2	6,2	7,2	8,2
		0,1	1,1	2,1	3,1	4,1	5,1	6,1	7,1	8,1
		0,0	1,0	2,0	3,0	4,0	5,0	6,0	7,0	8,0
		normative					counter-normative			
	function									

Most Hated Contributor: comp.lang.lisp

form	counter-normative	0,8	1,8	2,8	3,8	4,8	5,8	6,8	7,8	8,8
		0,7	1,7	2,7	3,7	4,7	5,7	6,7	7,7	8,7
		0,6	1,6	2,6	3,6	4,6	5,6	6,6	7,6	8,6
		0,5	1,5	2,5	3,5	4,5	5,5	6,5	7,5	8,5
		0,4	1,4	2,4	3,4	4,4	5,4	6,4	7,4	8,4
	normative	0,3	1,3	2,3	3,3	4,3	5,3	6,3	7,3	8,3
		0,2	1,2	2,2	3,2	4,2	5,2	6,2	7,2	8,2
		0,1	1,1	2,1	3,1	4,1	5,1	6,1	7,1	8,1
		0,0	1,0	2,0	3,0	4,0	5,0	6,0	7,0	8,0
		normative						counter-normative		
	function									

The Good, The Bad, and the Identity

- ◆ “Good” and “Bad” are not useful constructs
 - They both add up to identity
 - Even normative events perform identity work
 - ◆ Solidify the community
 - ◆ Establish and maintain the appropriate language of the group
 - ◆ Establish and maintain the appropriate language of the technical discipline
- ◆ Focus on Technical Communities
 - Interactions are different there
 - Particularly in written discourse communities in the virtual world
- ◆ Recognition of norms around particular interactions
 - Norms dictate a belief in “identity-neutral”

The Dreaded “So What?” Question

- ◆ Recognizes that there is a scale for both form and function
 - Each contributes to the community and personal identity formation in different ways
 - Different impacts for manipulating each scale
- ◆ Allows “mapping” at several levels and the drawing of relationships
 - Event
 - Contributor
 - Community
- ◆ Provides a pattern-based approach to behaviors in severely technically-determined communities
 - Visualization and pattern-matching