

Quantitative Ethnography

David Williamson Shaffer

Vilas Distinguished Achievement Professor of Learning Science

University of Wisconsin-Madison

Obel Foundation Professor of Learning Analytics

Aalborg University at Copenhagen

Data Philosopher

Wisconsin Center for Educational Research

Complex Collaborative Problem Solving

Learning is a process of Enculturation



MAP



EDIT



DRESS



SPEAK

8208 5:44 pm KT

Shadow



98
98
94



Actions



My Stuff

THINGS TO DO



Get Items From Storage



HELP

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NEWZ™



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Pet OF THE
MONTH



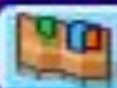
GOLDEN RETRIEV

Click for Details

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CARES™

FIND OUT HOW
YOU CAN HELP
CLICK HERE!



DRESS



SPEAK



How are you feeling?


How are you doing?

Do you want something to eat?

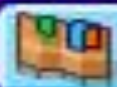
You're such a good pet!

Anything happen while I was gone?





I had a big party. Just kidding.



DRESS



SPEAK

How are you feeling?

How are you doing?

Do you want something to eat?

You're such a good pet!

Anything happen while I was gone?



MAP



EDIT



DRESS



SPEAK



NEW ITEMS

Page 2 of 2



Jack O'Chair



W220

No haunted Halloween house would be complete without this sinister seat!

(Only available until November 1, 2009)

BACK

THEME PREVIEW

ADD TO CART

0 Item(s)

KinzCash Left W 8208
Total Cost W 0



CHECK OUT

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Pet of the Month
GOLDEN RETRIEVER
Click for Details

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The Opossum
Webkinz
Cracker Barrel
Old Country Store
Click for Details



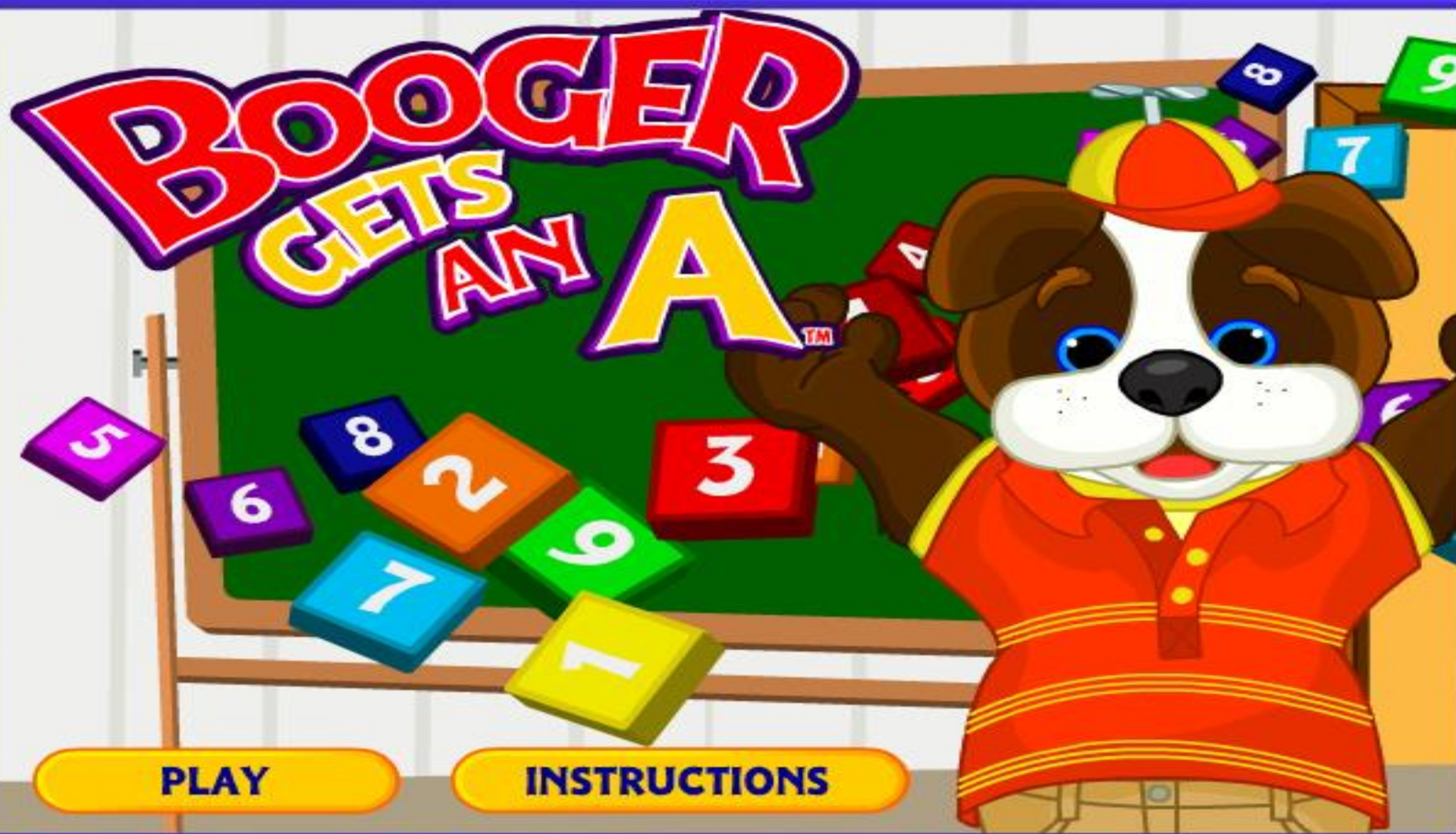
W Shop
COUPONS!
Are they there?
Check now!

TODAY IN
WEBKINZ
WORLD...
Don't Miss a thing!

Webkinz QUICK DRAW
You could win BIG!

Wheel of Yum
Spin and Win!

BOOGER GETS AN A



PLAY

INSTRUCTIONS

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Timber Wo

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GOLDEN RETRIEVER

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The Opossum



Click for Details:



SCORE 0 SUMS

3	2	3	2	1	
2	3	2	3	3	3
2	1	1	3	1	2
1	2	1	3	1	1
3	3	3	3	2	1



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ember We
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ADVERTISEMENT
OF THE
NTH
OCTO
EN RETRIE
Click for Details
ADVERTISEMENT
Opossum
kinz
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Old Country Store
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BAT

NEW

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Opal Pup

October
Birthstone Pet

ganzestore.com

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Webkinz Pet a
Bonus Kinz Kili

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8208 5:52 pm KT

Actions

My Stuff

THINGS TO DO

Shadow



100
97
92



Show:

Back to Start

19 Items

HELP

Time until next job:

00:00:00



JOB BOARD

Newz Delivery

There are Newspapers to deliver! Time to get to work!

Fence Painting

Ms. Birdy's Assistant

Shoe Store Clerk

Piano Player



MY RESUME

8208 5:54 pm KT

Actions

My Stuff

THINGS TO DO

Shadow



Show:

Back to Start

19 Items

HELP

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Learning is a process of Enculturation

culture

Learning is a process of Enculturation

“A DISCOURSE is a socially accepted association among ways of using language, of thinking, feeling, believing, valuing, and of acting that can be used to identify oneself as a member of a socially meaningful group... or to signal (that one is playing) a socially meaningful role.”

- Jim Gee

culture

Learning is a process of Enculturation

DISCOURSE



culture

Learning is a process of Enculturation



DISCOURSE



culture

Learning is a process of Enculturation



—David Williamson Shaffer

Learning is a process of Enculturation



—Charles Goodwin



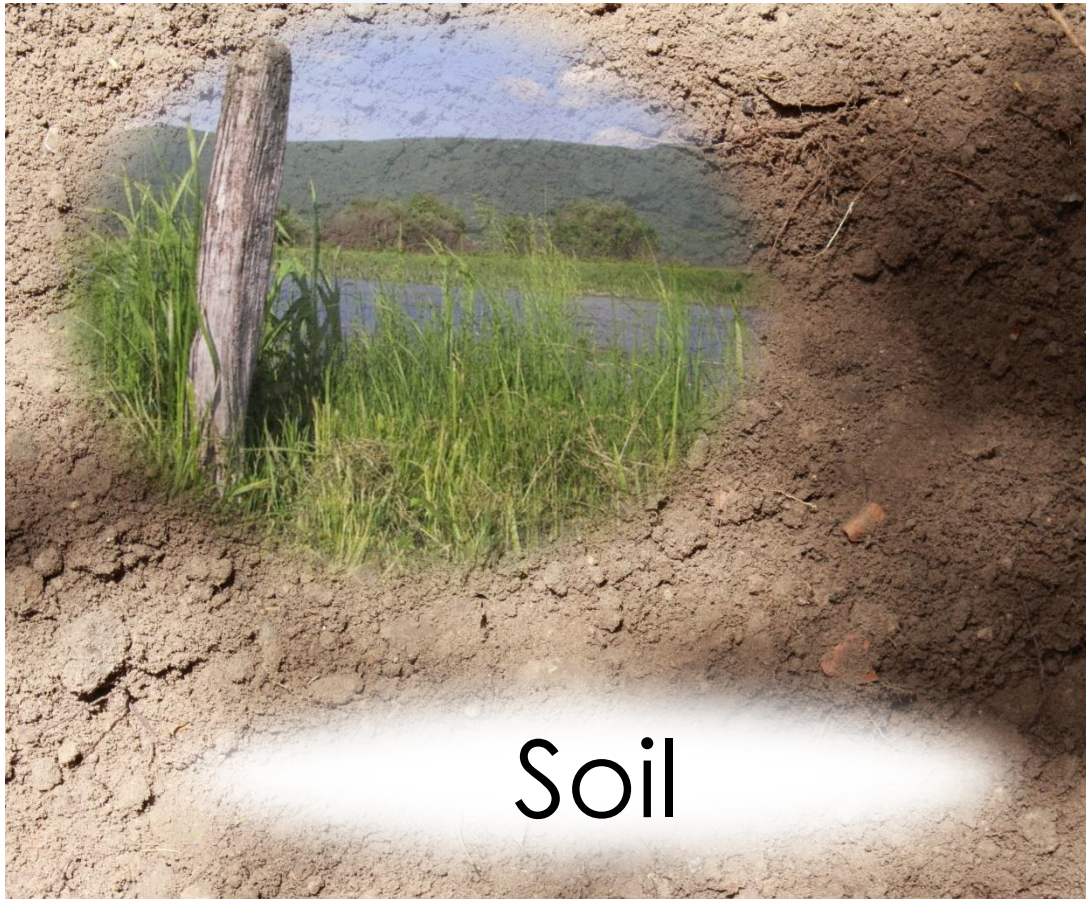
—David Williamson Shaffer

Learning is a process of Enculturation



—Charles Goodwin

Learning is a process of Enculturation

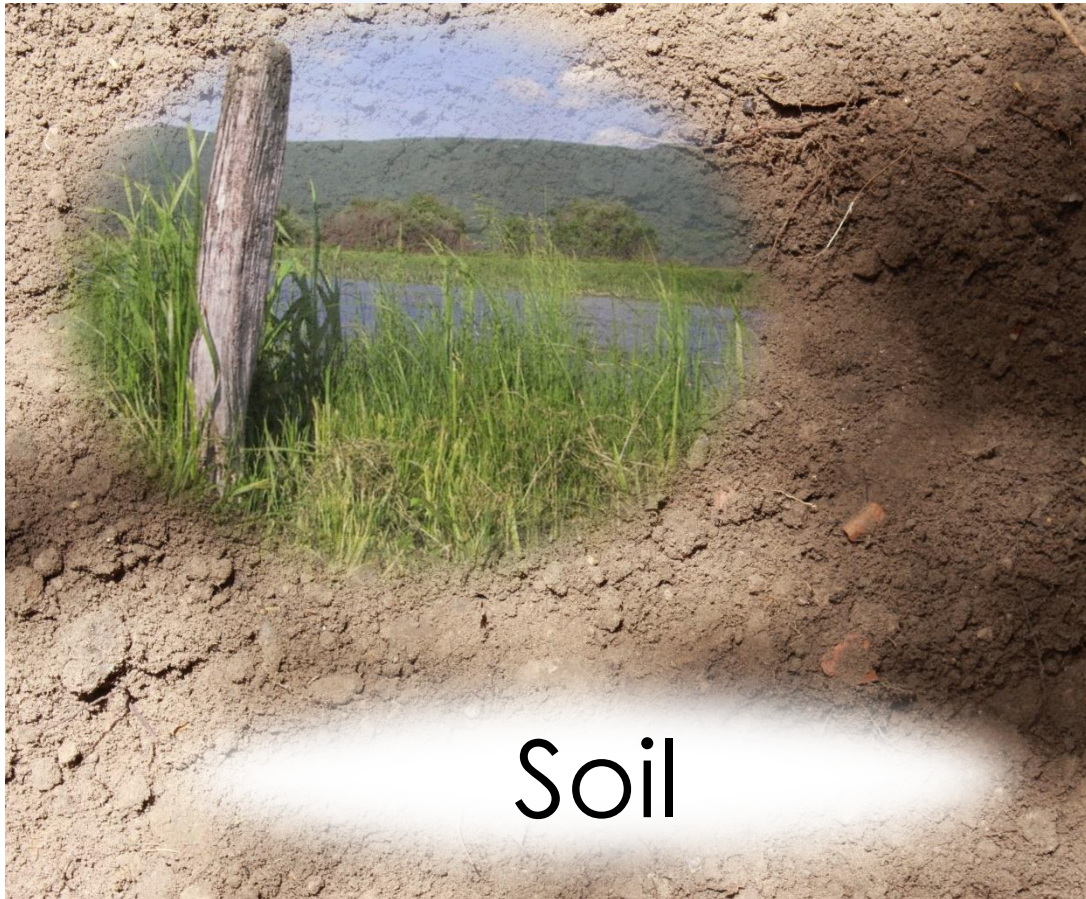


Soil

—Charles Goodwin

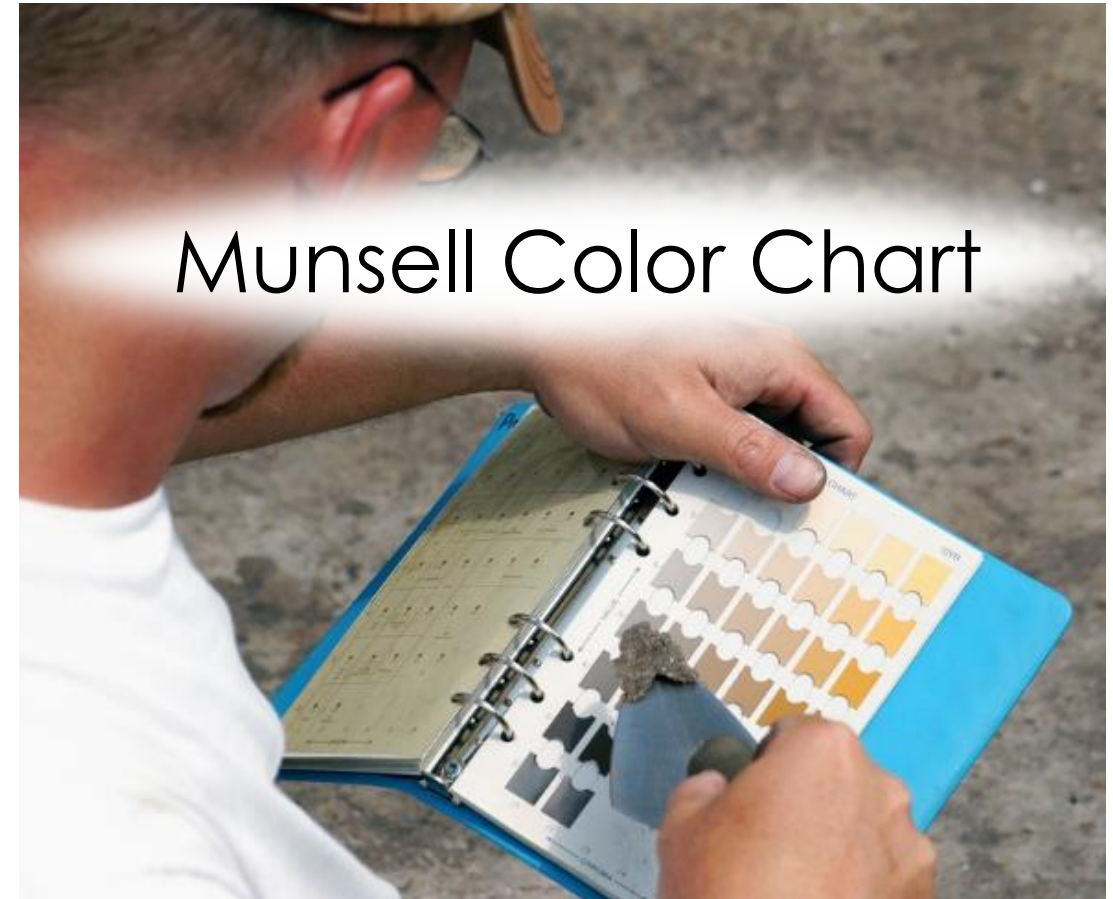


Learning is a process of Enculturation



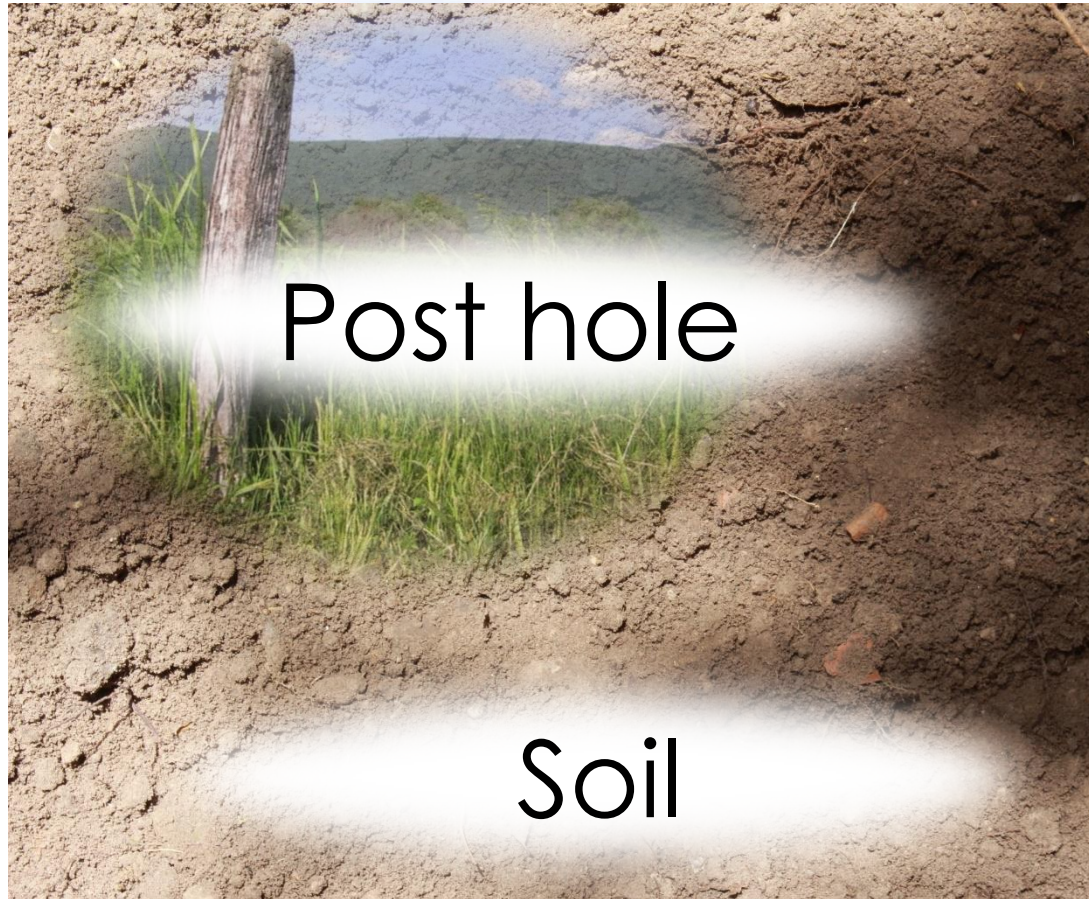
Soil

—Charles Goodwin

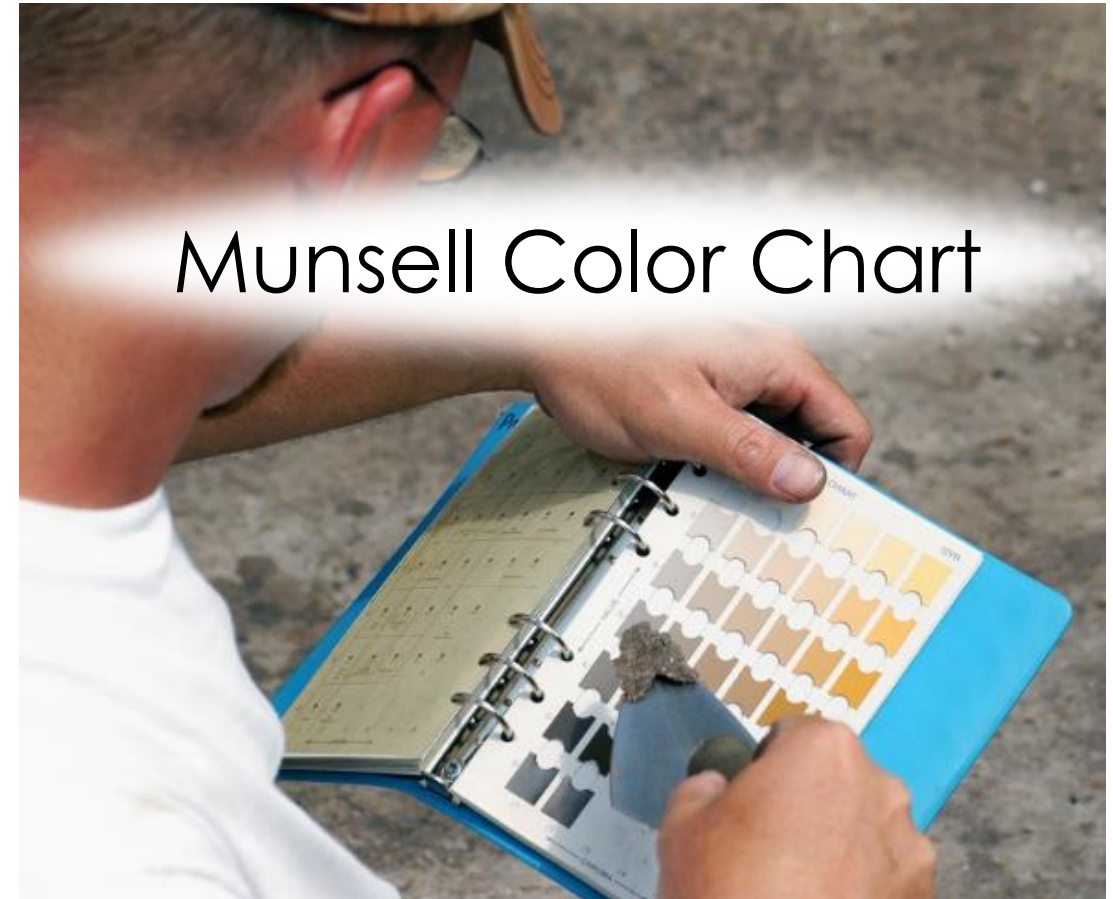


Munsell Color Chart

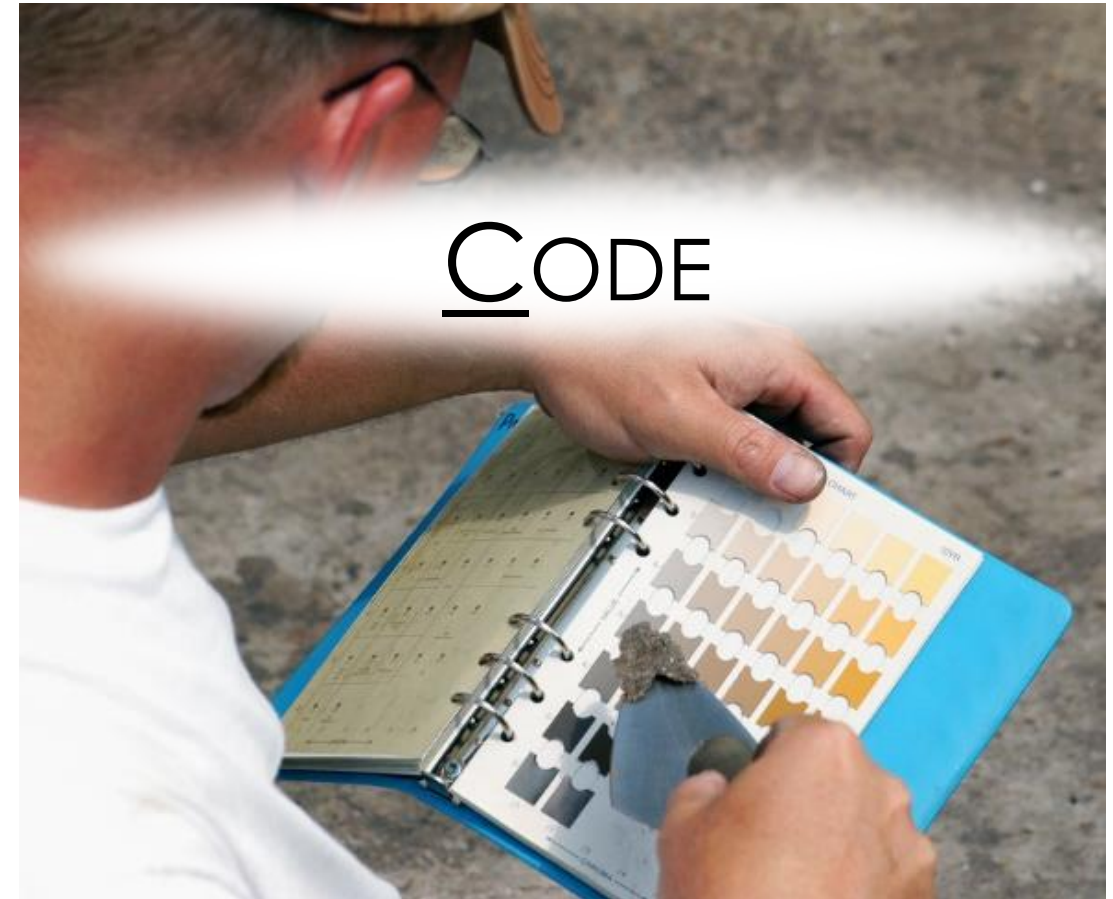
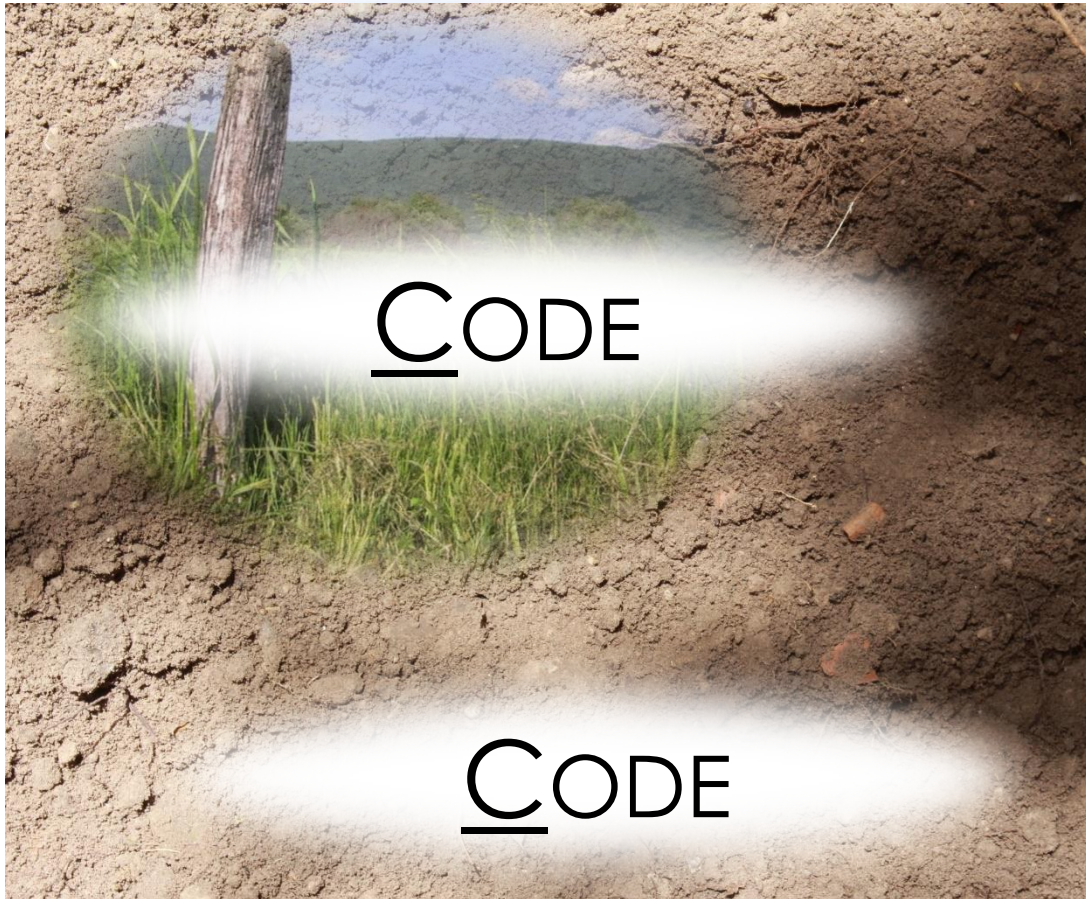
Learning is a process of Enculturation



—Charles Goodwin

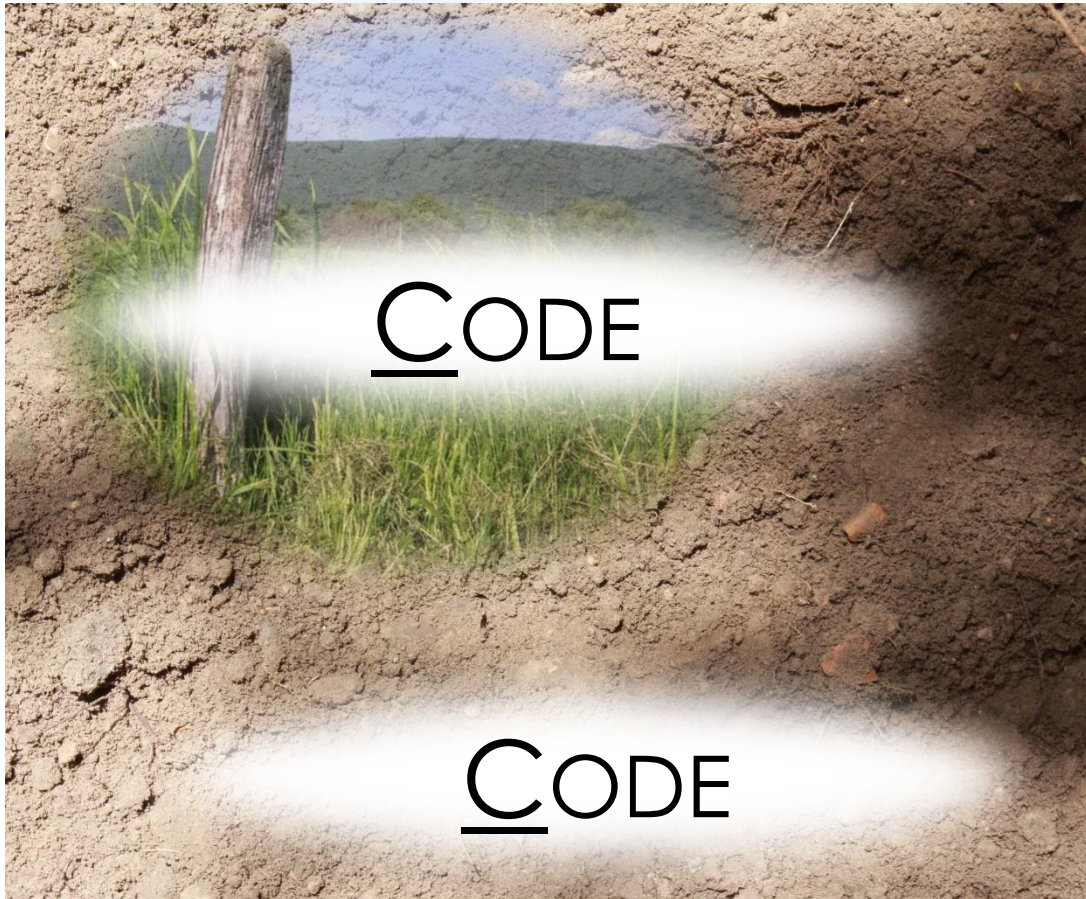


Learning is a process of Enculturation

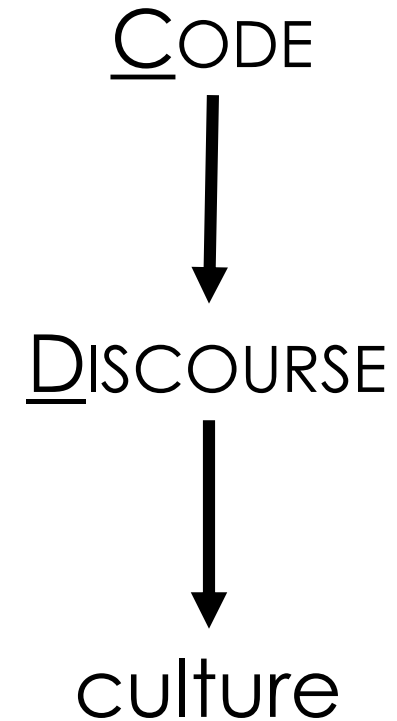


—Charles Goodwin

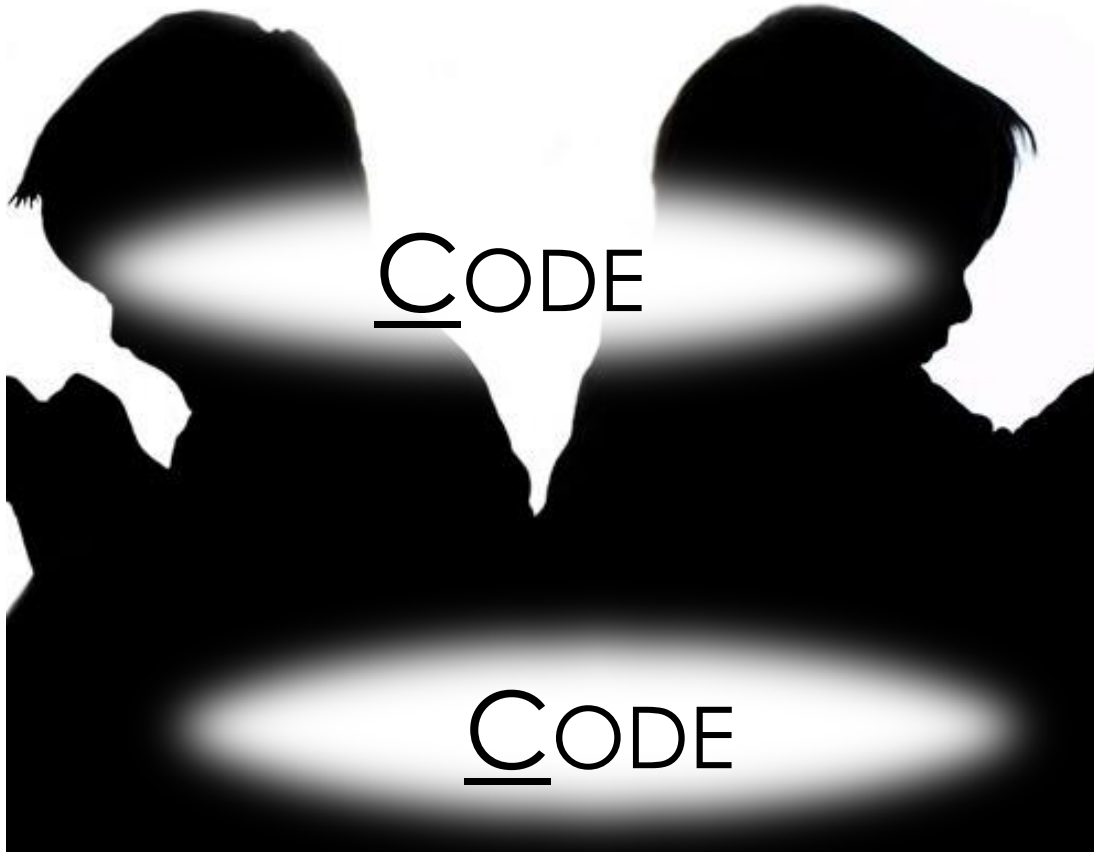
Learning is a process of Enculturation



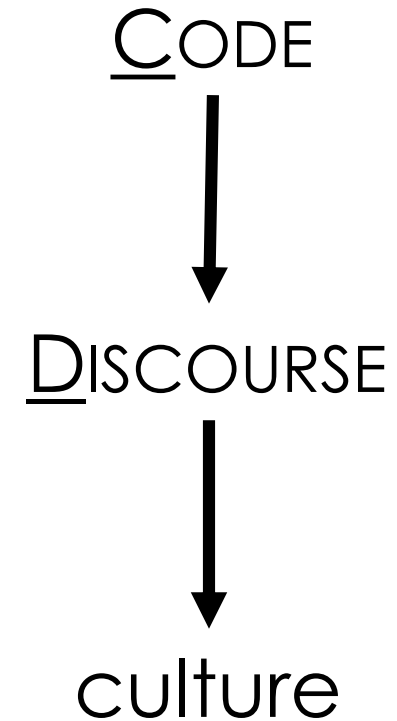
—Charles Goodwin



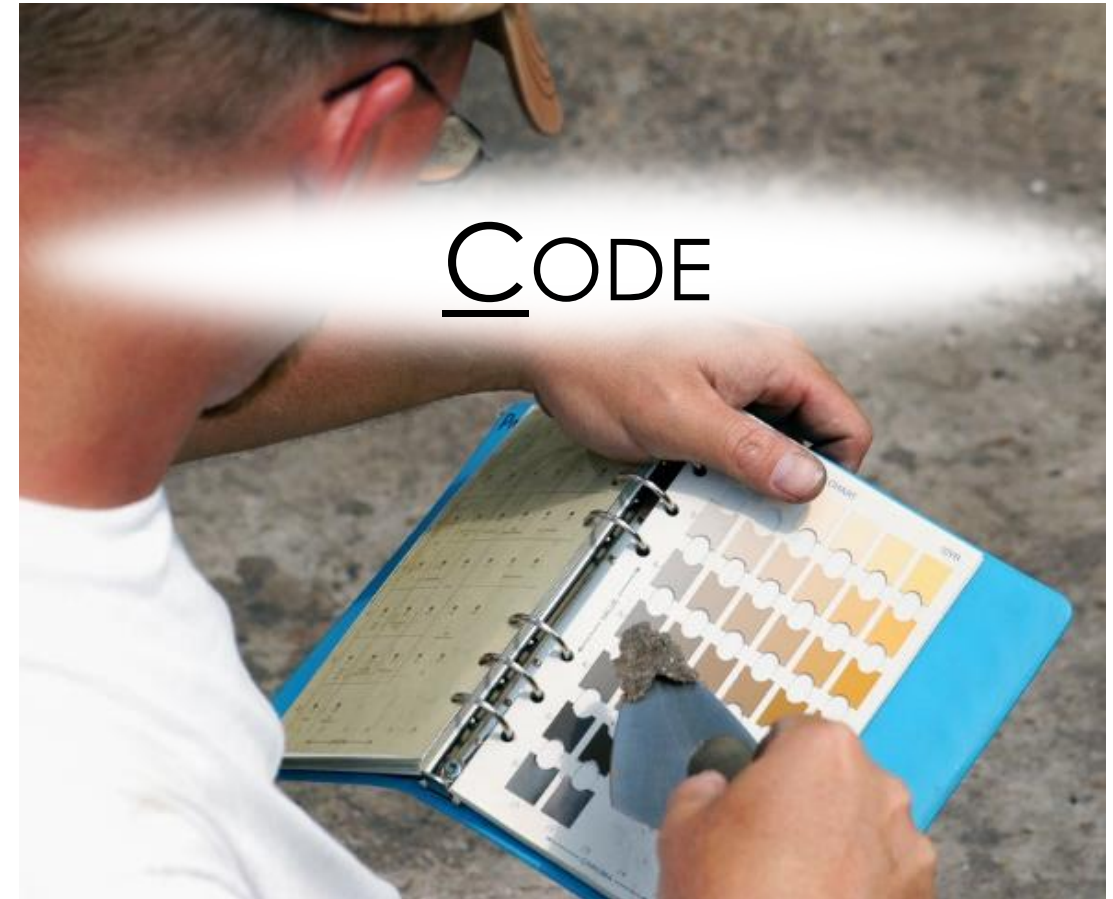
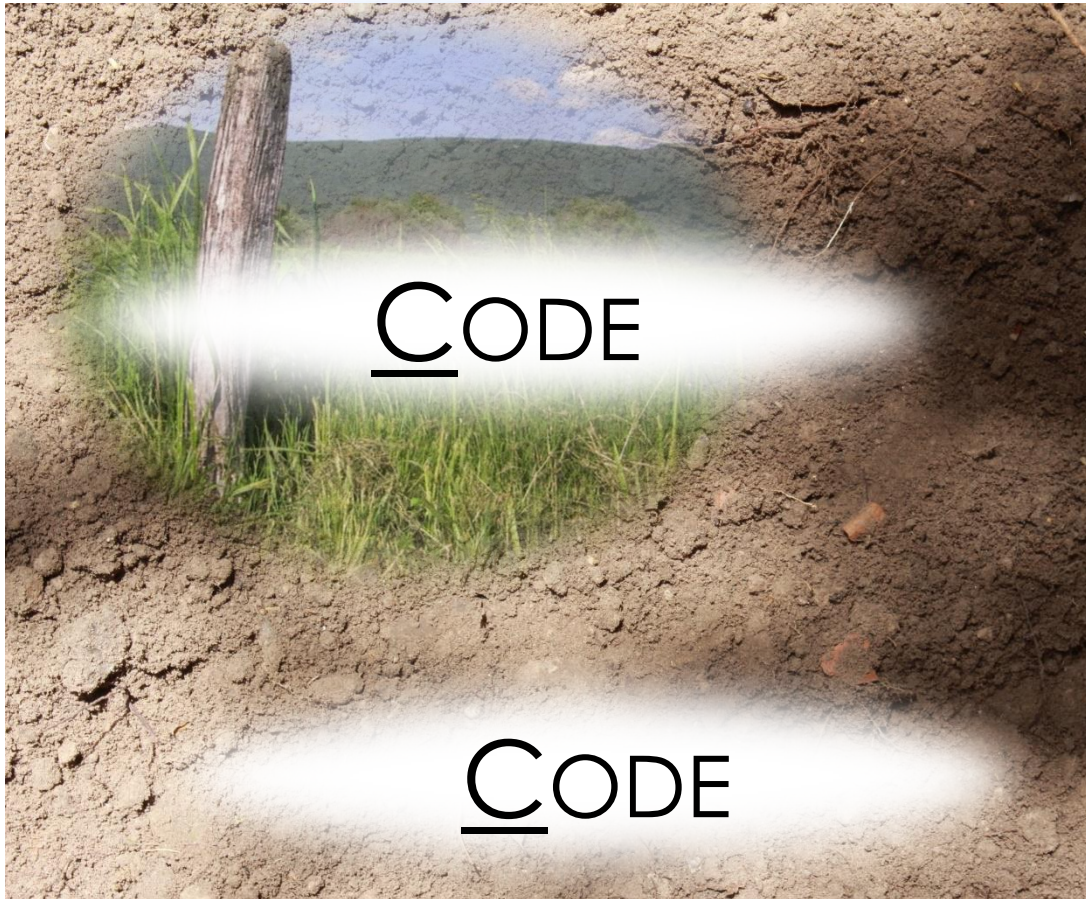
What are some CODES in the things you study?



—Charles Goodwin

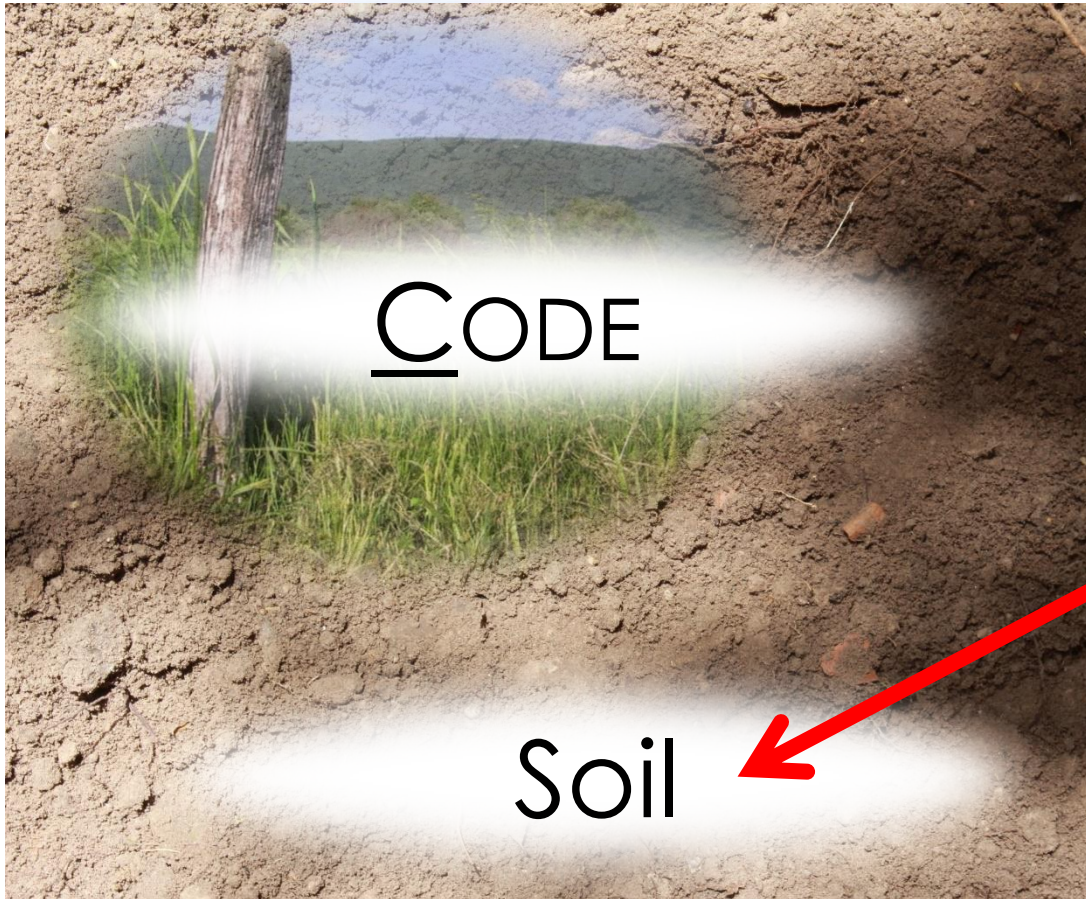


Learning is a process of Enculturation

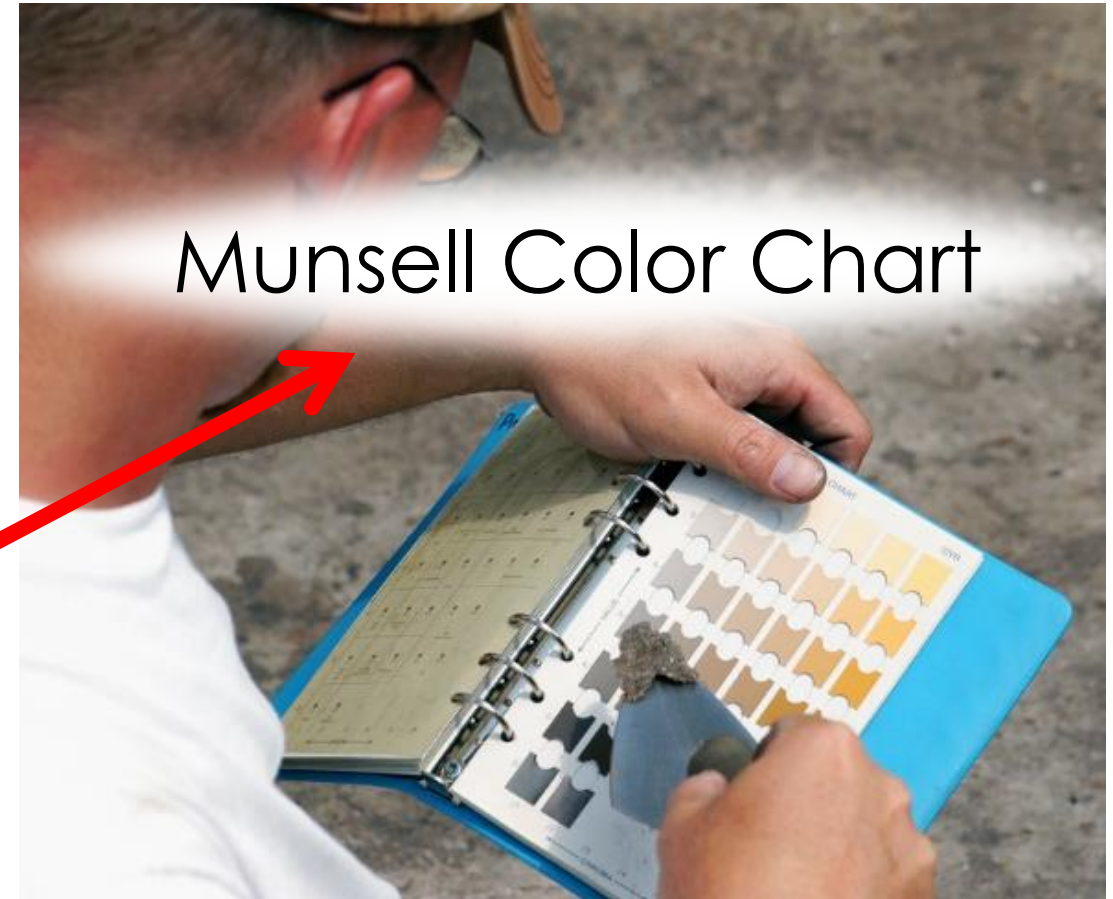


—Charles Goodwin

Learning is a process of Enculturation

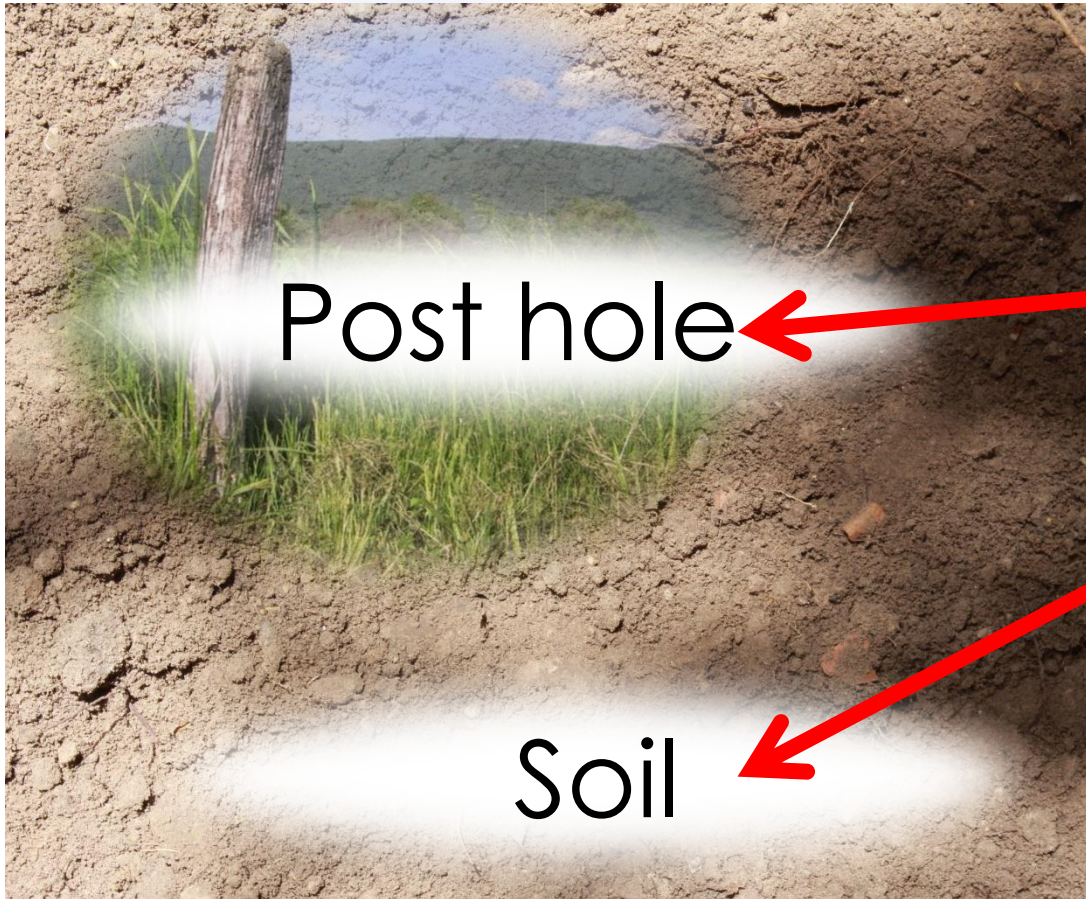


—Charles Goodwin

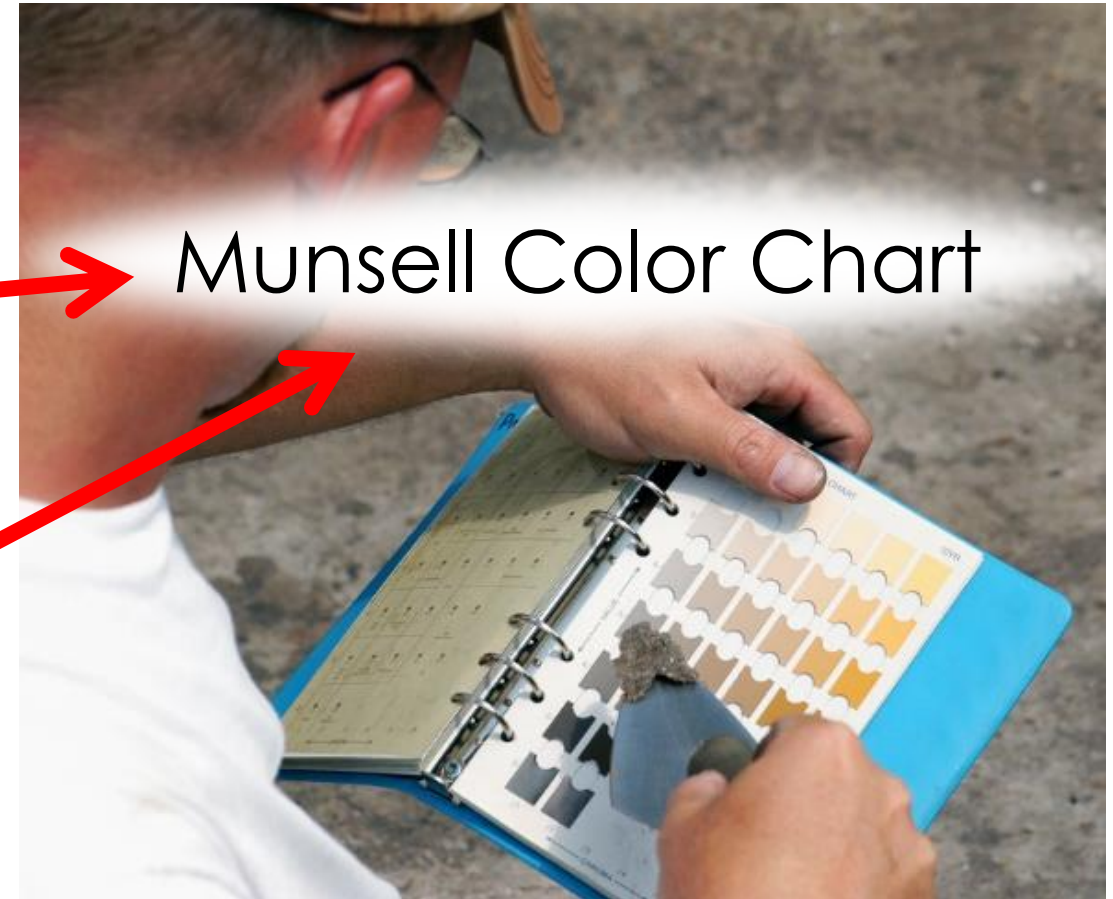


—David Williamson Shaffer

Learning is a process of Enculturation



—Charles Goodwin

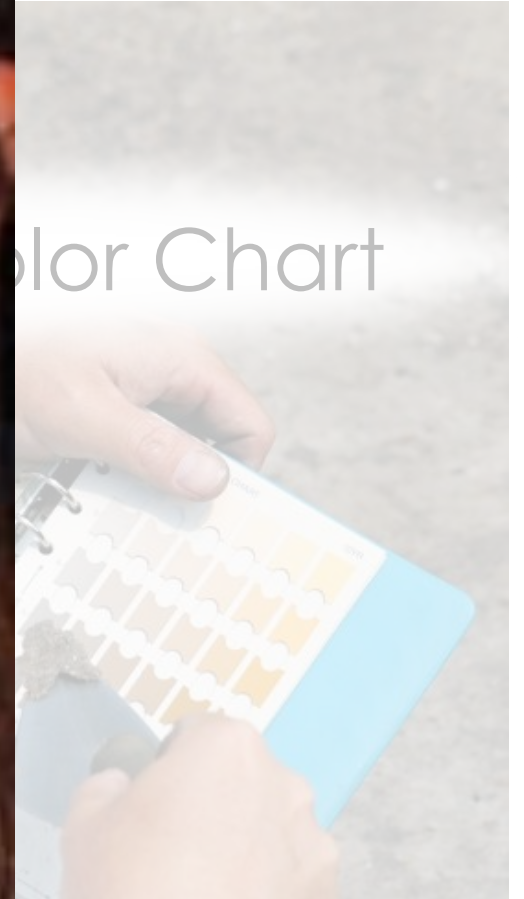


—David Williamson Shaffer

Learning is a process of Enculturation



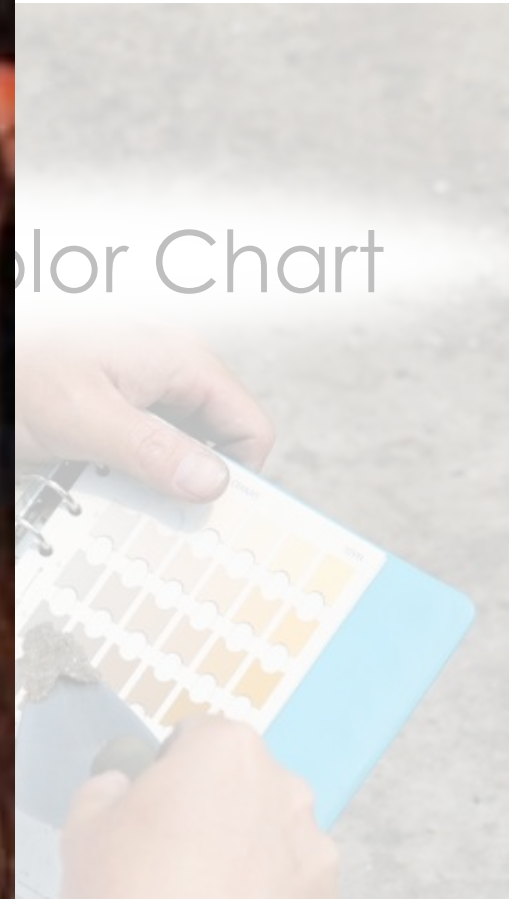
Pos



Color Chart

Epistemic Frame

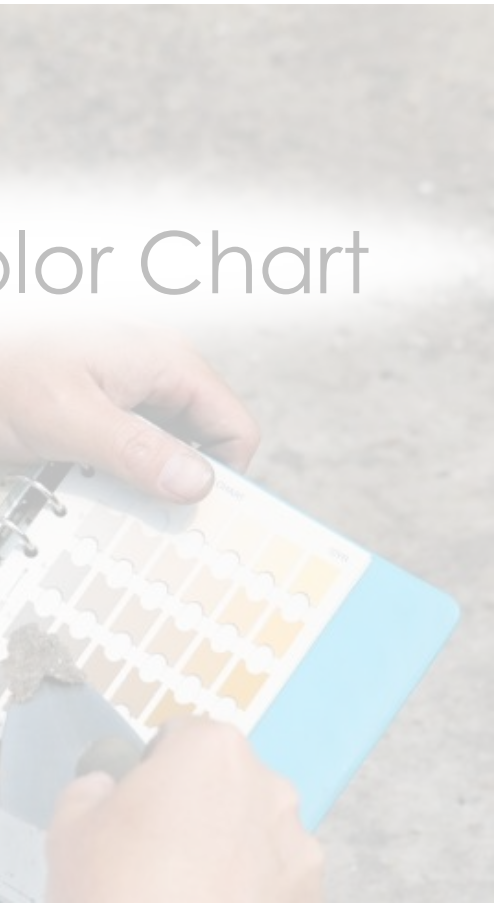
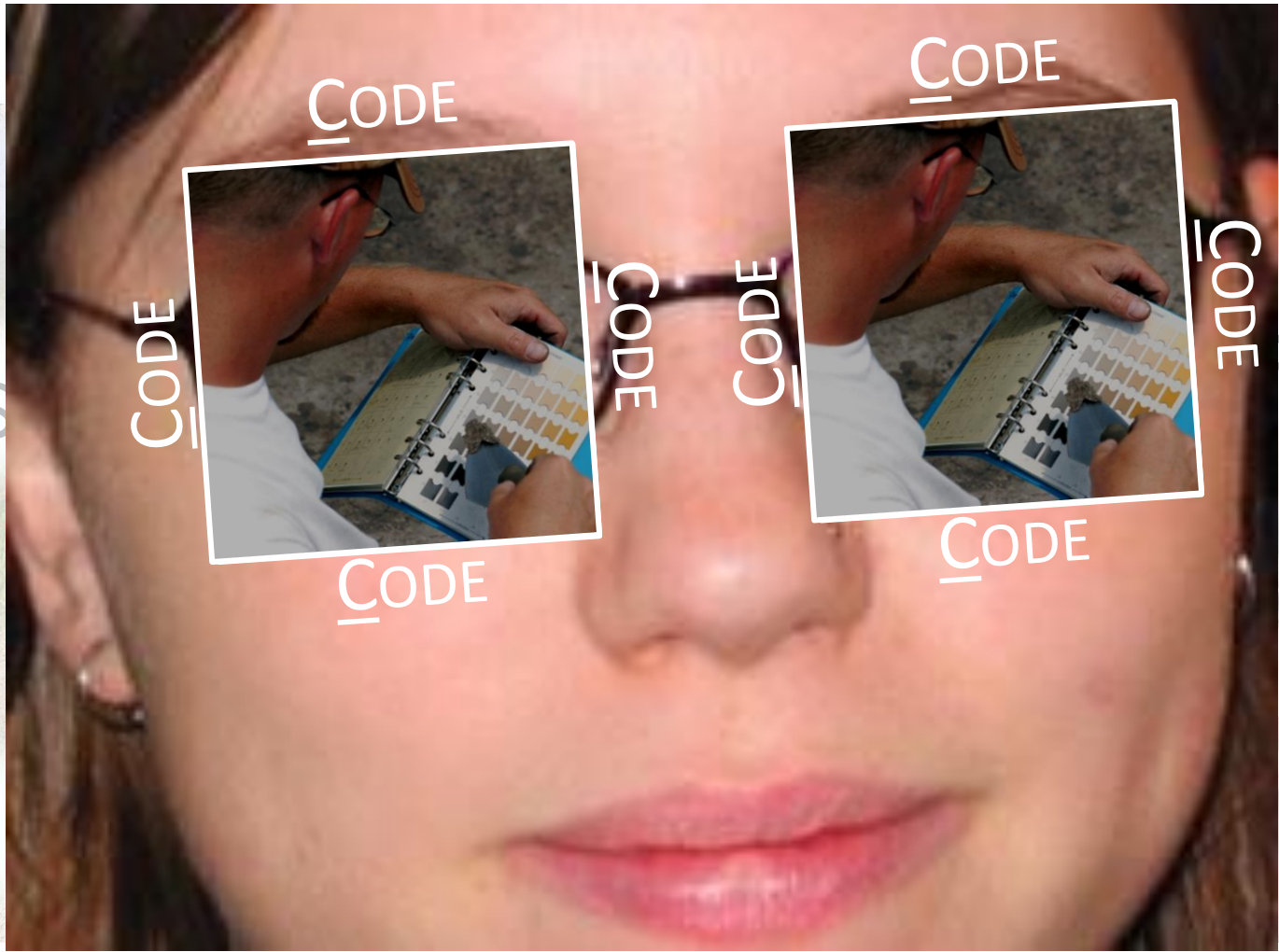
Learning is a process of Enculturation



Learning is a process of Enculturation



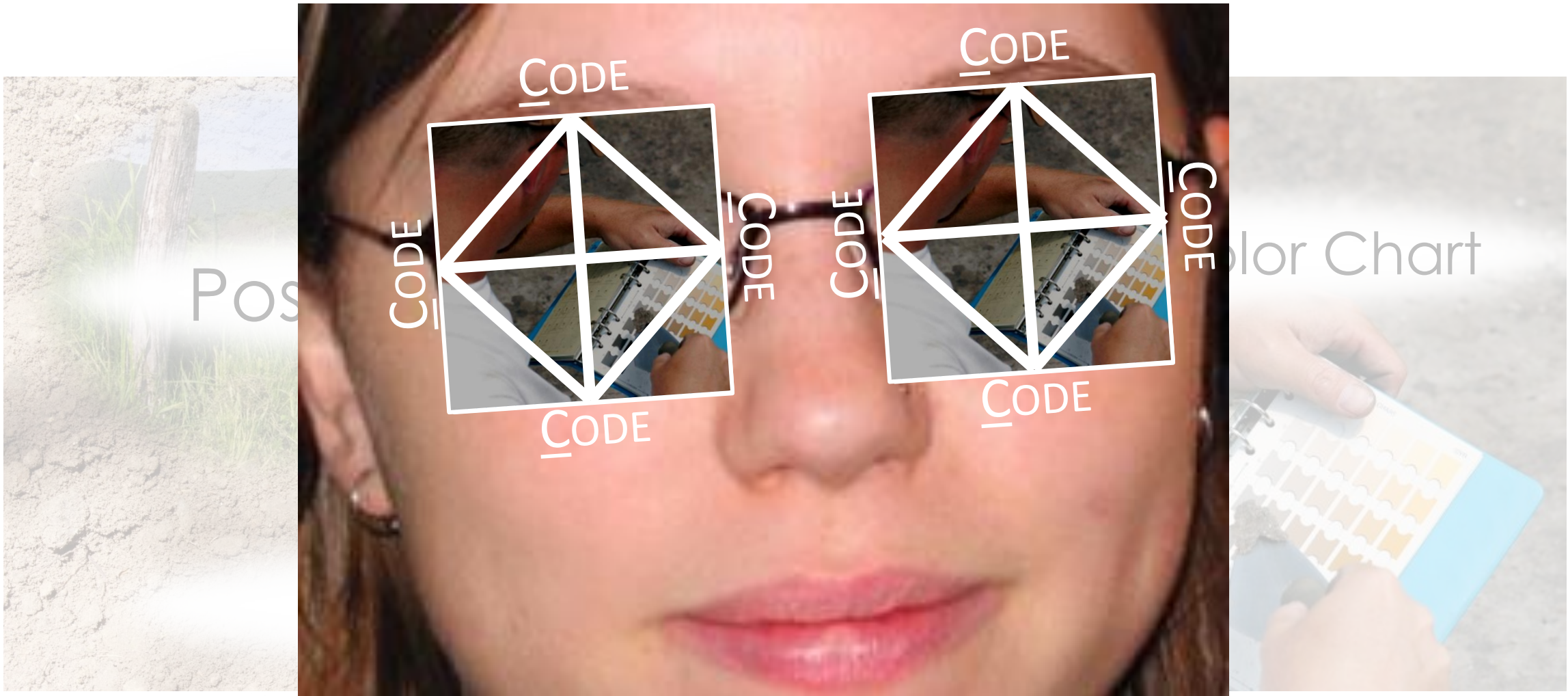
Pos



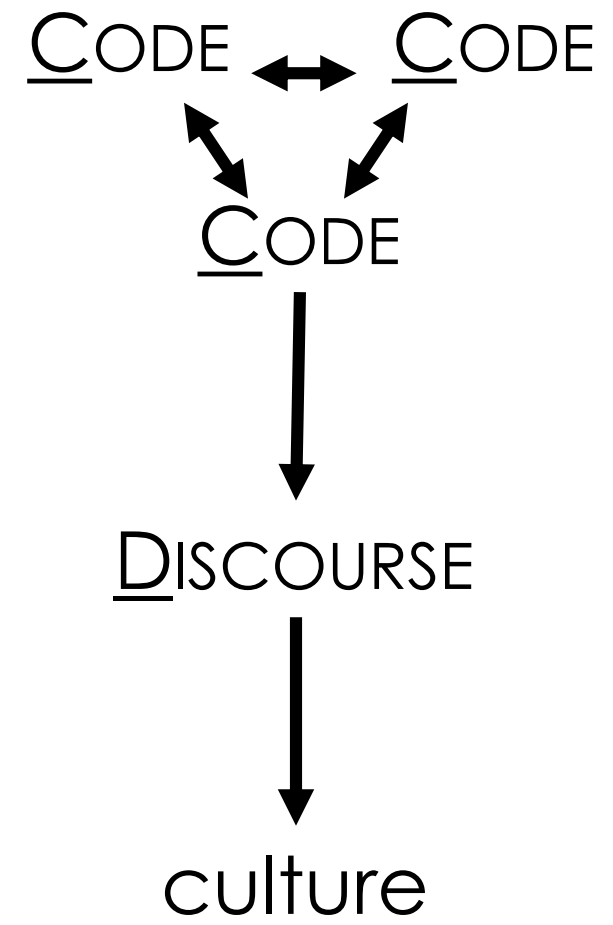
Color Chart

Epistemic Frame

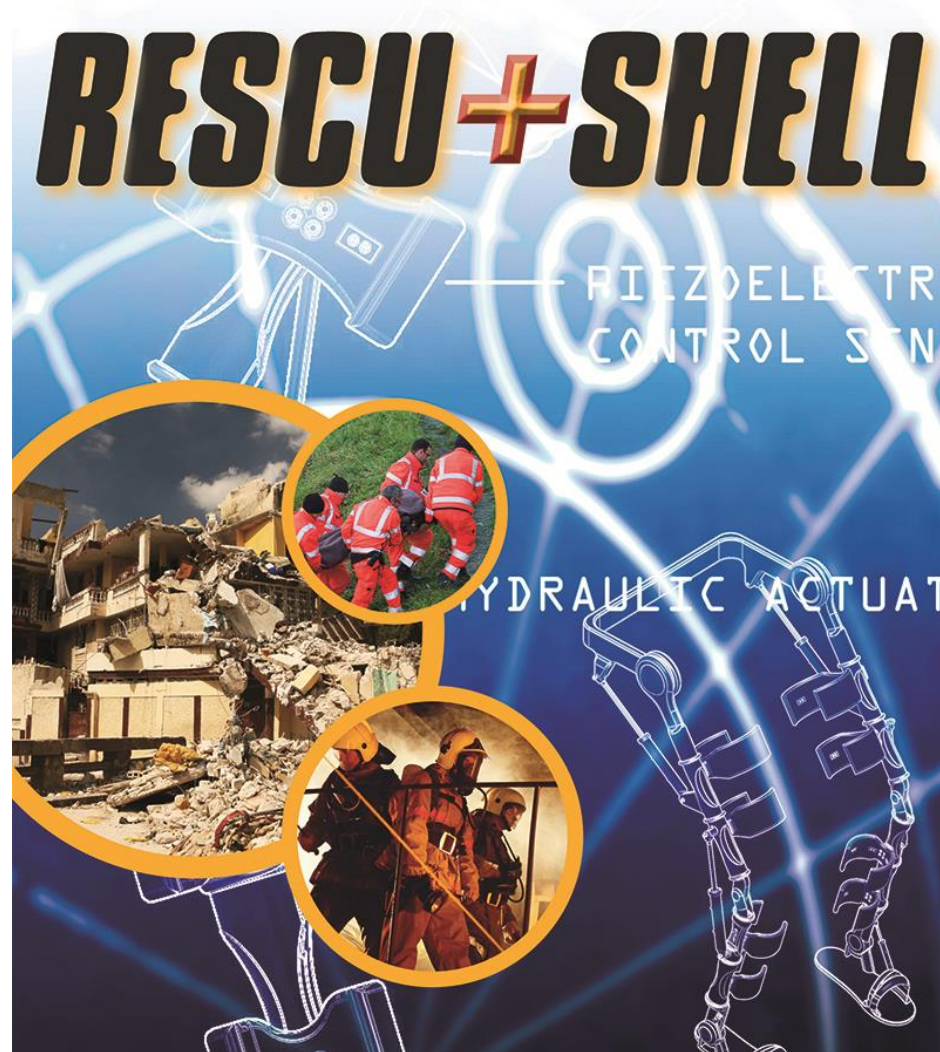
Learning is a process of Enculturation



Epistemic Frame



Virtual Internships



Virtual Internships

Material

Aluminum

Control

Piezoelectric

Power Source

LIPO

Actuator

Series Elastic

ROM

ROM 1



Virtual Internships

<https://www.youtube.com/watch?v=zyfJAtL93OU>

Material	Control	Power Source	Actuator	ROM
Aluminum <input type="button" value="v"/>	Piezoelectric <input type="button" value="v"/>	LIPO <input type="button" value="v"/>	Series Elastic <input type="button" value="v"/>	ROM 1 <input type="button" value="v"/>



Virtual Internships

[7/23 11:04AM] **Fernando** - @Team 3: How do you attach your batch to your notebook?

[7/23 11:04AM] **James** - @Team 3: its the middle option at the bottom

[7/23 11:05AM] **Fernando** - @Team 3: But when I click it, it opens up a new notebook entry.

[7/23 11:05AM] **James** - @Team 3: yea and it should be attached

[7/23 11:05AM] **James** - @Team 3: under the tittle it should say it

[7/23 11:05AM] **Jeth** - @Team 3: You can attach it by using the paper clip on the top right of the notebook.

[7/23 11:06AM] **Fernando** - @Team 3: Alright I got it. Thanks

[7/23 11:06AM] **Jeth** - @Team 3: i got jame's justification. I still need the others.

[7/23 11:07AM] **James** - @Team 3: due in about 7 minutes

[7/23 11:07AM] **Jeth** - @Team 3: I'll paste my justifications when you guys are ready.

[7/23 11:07AM] **James** - @Team 3: im ready for it

[7/23 11:07AM] **Fernando** - @Jeth: I'll put my justification on shared

Virtual Internships

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[7/23 11:05AM] **Jam**

[7/23 11:05AM] **Jam**

[7/23 11:05AM] **Jeth**

clip on the top right o

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Yes, one of my designs had a payload of 718, agility 281, recharge 7.88, safety 183, and price 14045. These attributes all meet company standards.

Virtual Internships

Data

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[7/23 11:05AM] Jeth

clip on the top right o

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Virtual Internships

Technical Requirements

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[7/23 11:05AM] Jam

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[7/23 11:05AM] Jeth

clip on the top right

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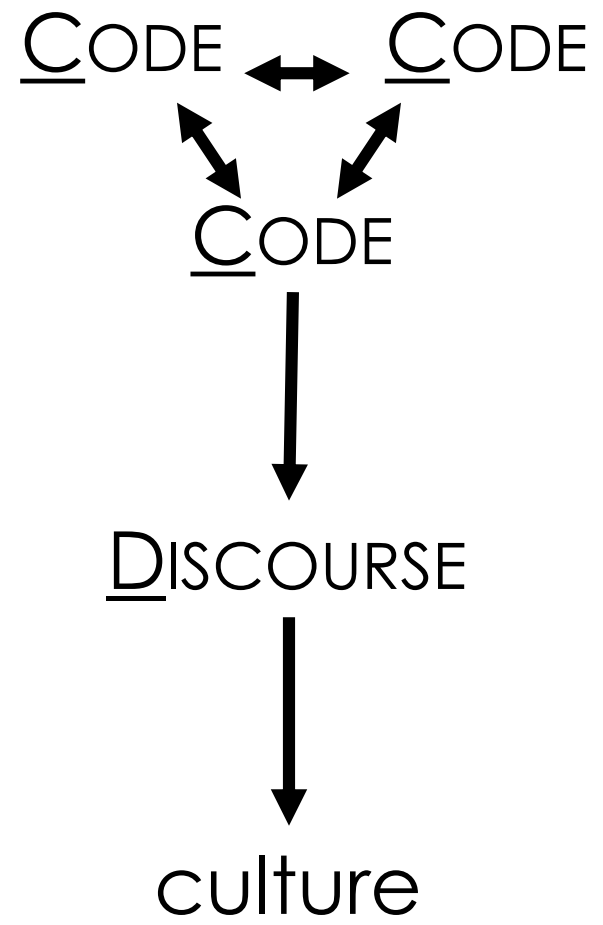
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Yes, one of my designs had a payload of 718, agility 281, recharge 7.88, safety 183, and price 14045. These attributes all meet company standards.

discourse



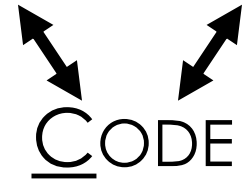
UserName	Condition	CONFIDENCE.Change	Timestamp	Activity	GroupName	GameDay	text
robert z	FirstGame	1	10/17/2013 9:27	12	1	31	Hello Justin and Team, I'm Robert. I worked with the Pneumatic team before.
akash v	FirstGame	2	10/17/2013 9:29	12	1	31	Hi, I am Akash and I worked with the electric actuator before this group.
amirah u	FirstGame	2	10/17/2013 9:31	12	1	31	Hello, I am Amirah. I previously worked with Series Elastic actuator.
peter s	FirstGame	1	10/17/2013 9:31	12	1	31	Hi, I am Peter. I previously worked with the series elastic team
jimmy i	FirstGame	2	10/17/2013 9:33	12	1	31	Hello, I am Jimmy and I worked with the Hydraulic actuator on my previous team
amirah u	FirstGame	2	10/17/2013 9:38	12	1	31	yes i am. and i already posted in the chat that i previously worked with series elastic team.
robert z	FirstGame	1	10/17/2013 9:39	12	1	31	I worked with the Pneumatic Actuator. For a quick review, its strengths lie in that it is energ
akash v	FirstGame	2	10/17/2013 9:40	12	1	31	Ok I had the electric actuator and we kept what we found was as ROM went up the agility a
jimmy i	FirstGame	2	10/17/2013 9:41	12	1	31	So Hydraulic actuators use fluid to generate work with a piston. It can generate the highest
peter s	FirstGame	1	10/17/2013 9:43	12	1	31	I researched the series electric actuator. The series elastic actuator had a larger payload, bu
akash v	FirstGame	2	10/17/2013 9:45	12	1	31	I am wondering, did anybody have a prototype that was able to meet the internal consulta
peter s	FirstGame	1	10/17/2013 9:47	12	1	31	No, my previous group was not able to meet any of the requests from the internal consulta
devin c	FirstGame	0	10/22/2013 9:23	13	1	36	Morning everyone.
devin c	FirstGame	0	10/22/2013 9:27	13	1	36	Anything we should be doing in the meantime?
devin c	FirstGame	0	10/22/2013 9:29	13	1	36	Yep, completed yesterday.
devin c	FirstGame	0	10/22/2013 9:31	13	1	36	@Justin Kim: Forgive me, but I'm fairly uninformed of the instructions on said presentation.
jimmy i	FirstGame	2	10/22/2013 9:35	13	1	36	Oh, I see that now
jimmy i	FirstGame	2	10/22/2013 9:36	13	1	36	Yup, I just saw the email from Vedant
devin c	FirstGame	0	10/22/2013 9:38	13	1	36	@Justin Kim: Would you mind clarifying: the individual presentation and poster presentatio
devin c	FirstGame	0	10/22/2013 9:40	13	1	36	@Devin: So by working on the presentation, you mean simply prepare relevant informatio
devin c	FirstGame	0	10/22/2013 9:41	13	1	36	@Justin Kim: Woops, meant so send that to you and not myself.
peter s	FirstGame	1	10/22/2013 9:46	13	1	36	I submitted my first notebook and now I'm working on the second one about the REDD ana

field notes



discourse

CODE ↔ CODE



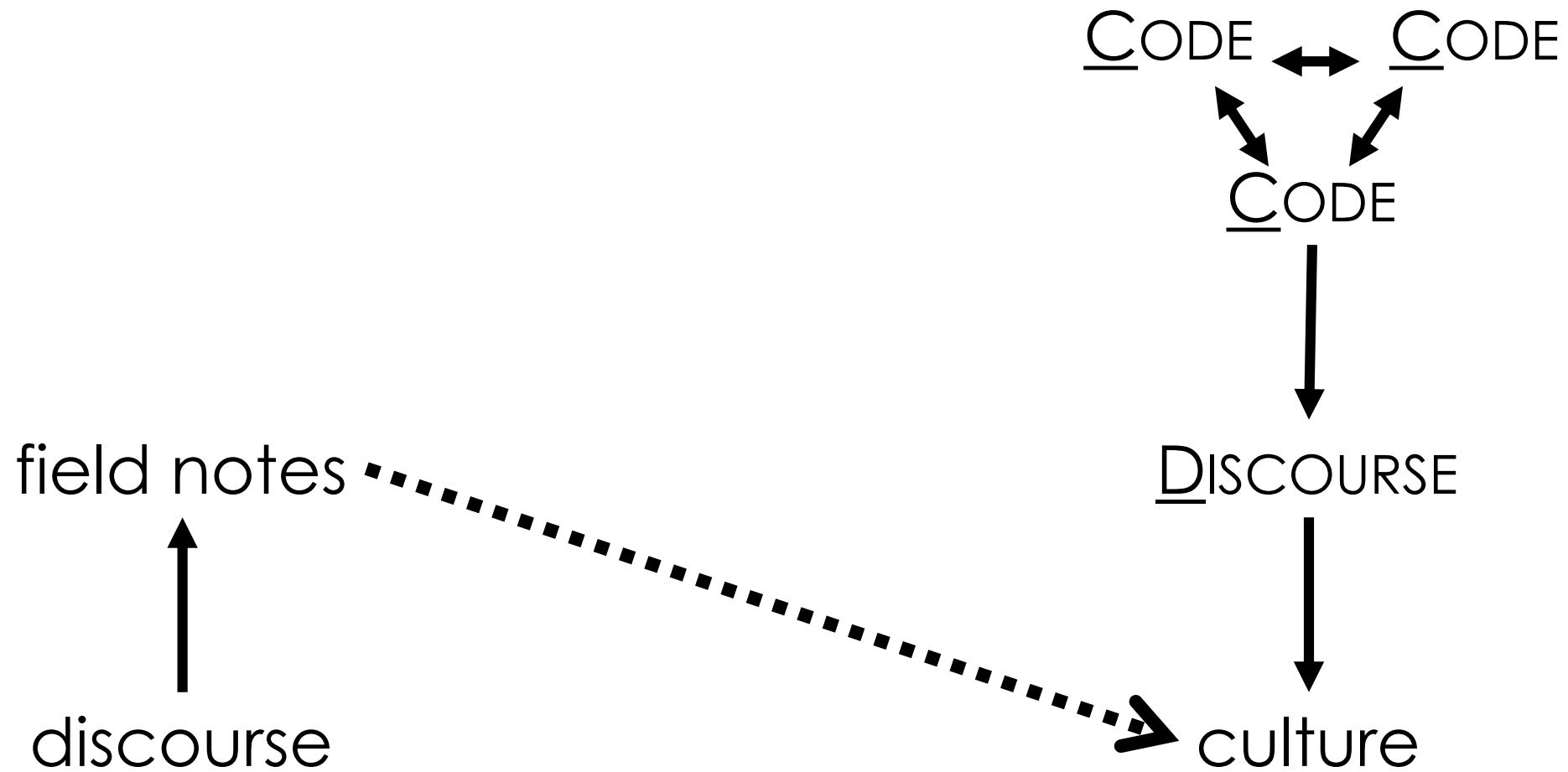
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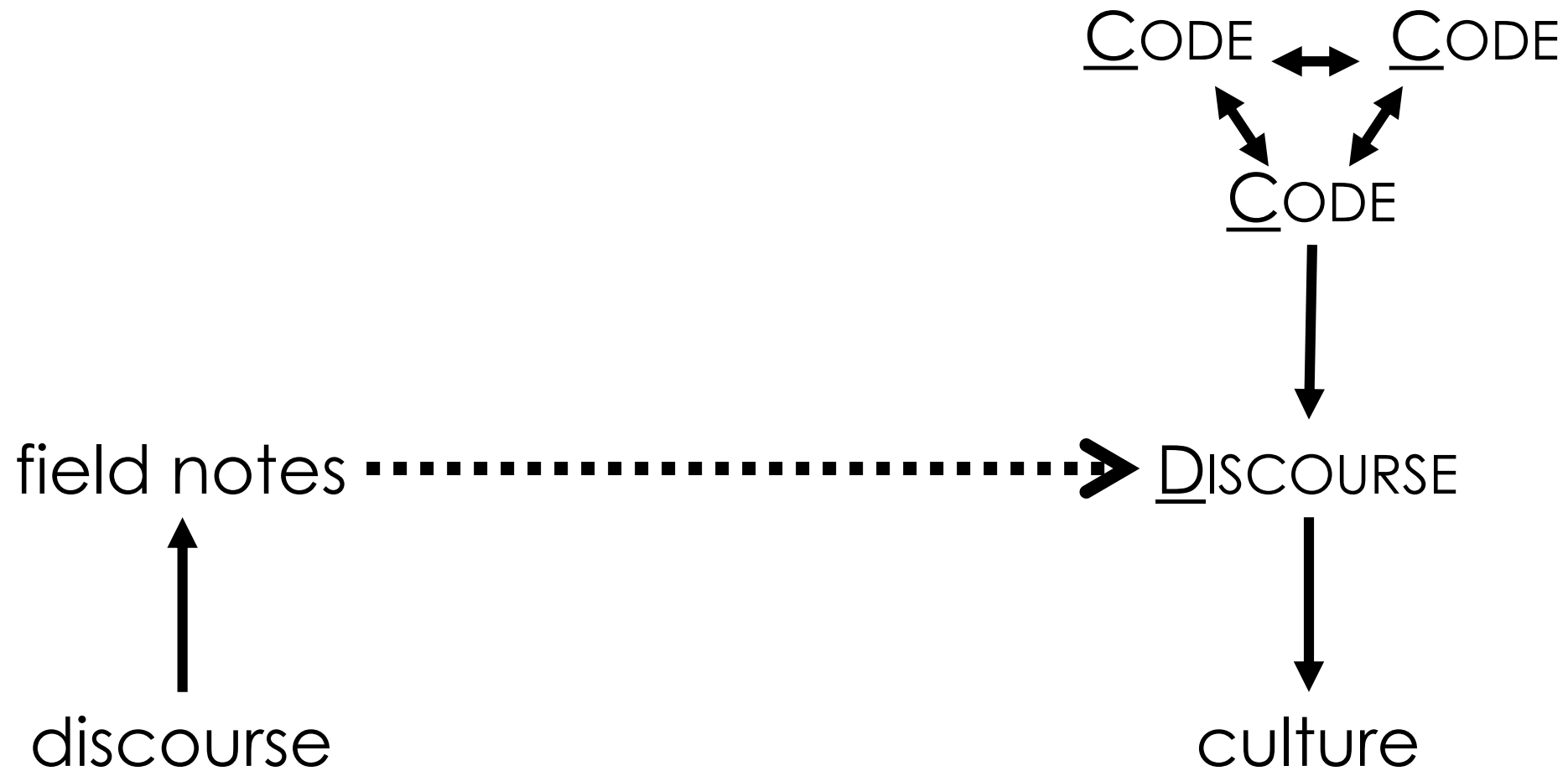


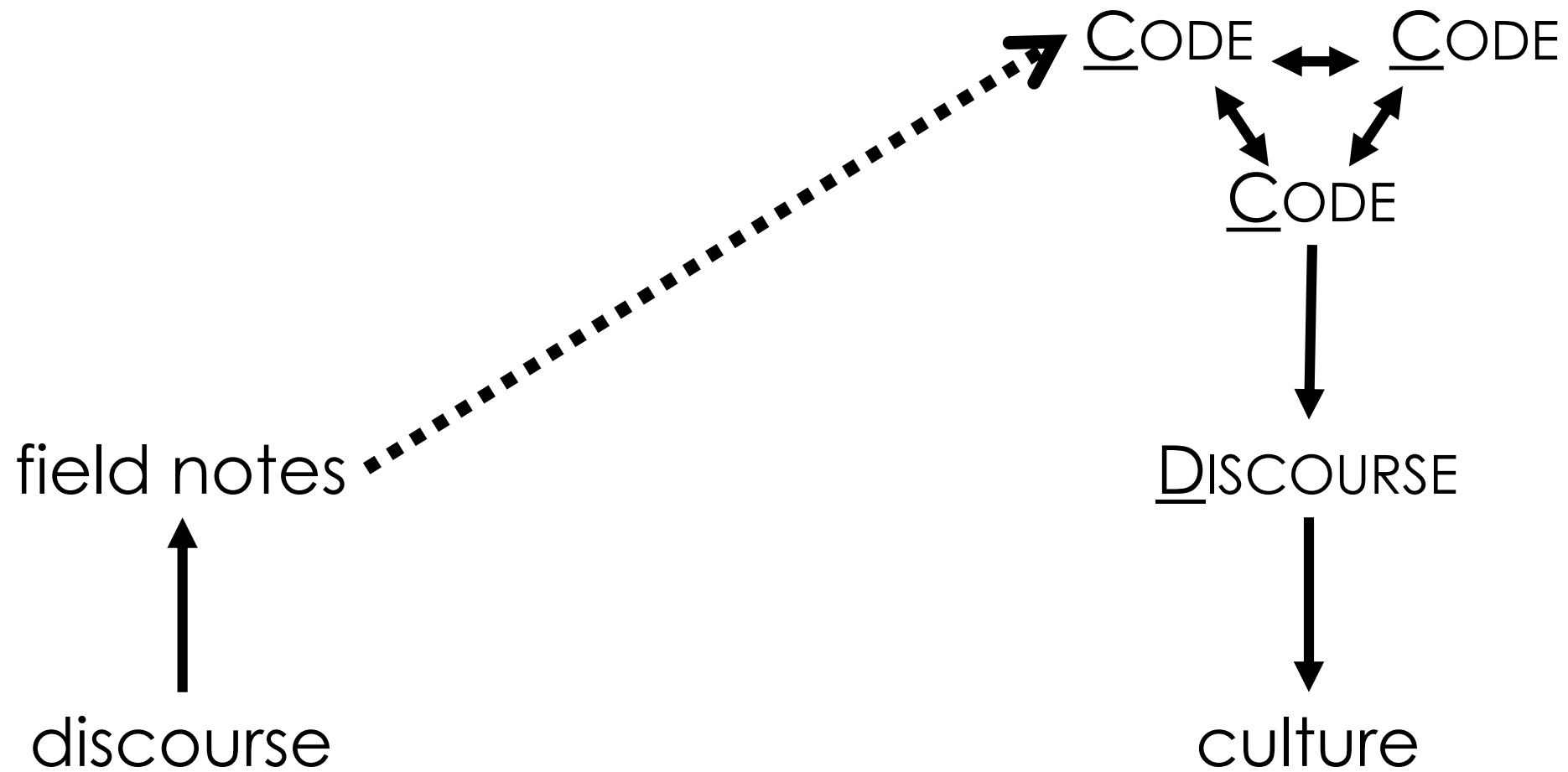
DISCOURSE

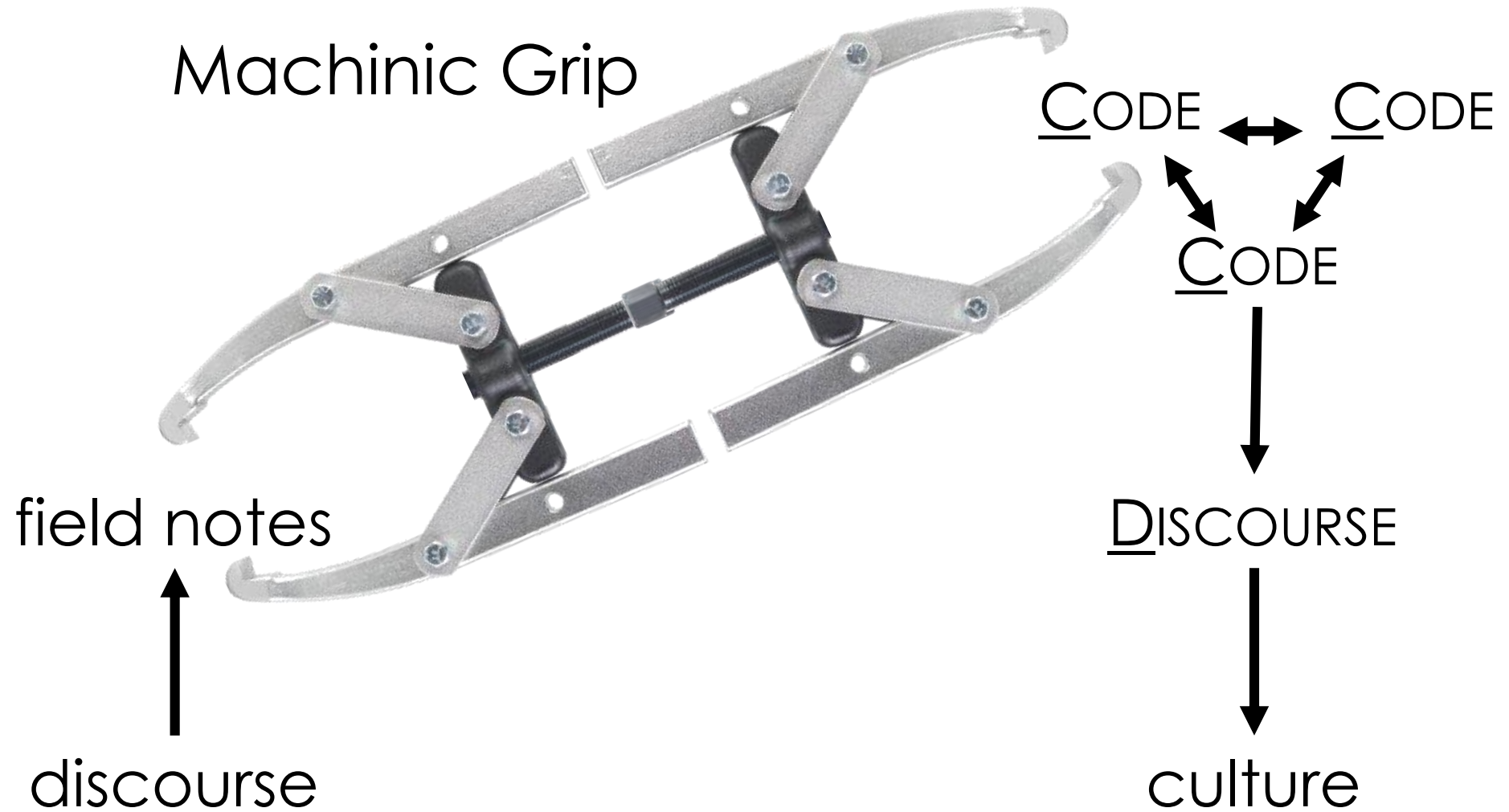


culture









—Andrew Pickering



CODE

Culturally-relevant and
meaningful aspects of a

DISCOURSE

CODE



Culturally-relevant and
meaningful aspects of a

DISCOURSE

CODE

code



Culturally-relevant and
meaningful aspects of a

DISCOURSE

CODE



code

Things that count as
evidence or *warrants* for

CODES

Culturally-relevant and
meaningful aspects of
a DISCOURSE

CODE



code

Things that count
as evidence or
warrants for CODES

What are codes in things you study?

CODES

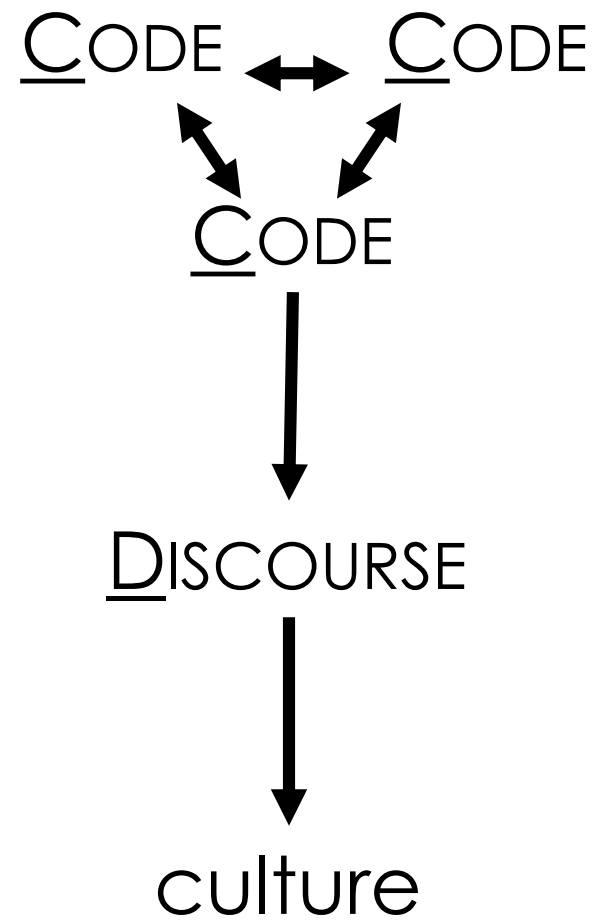
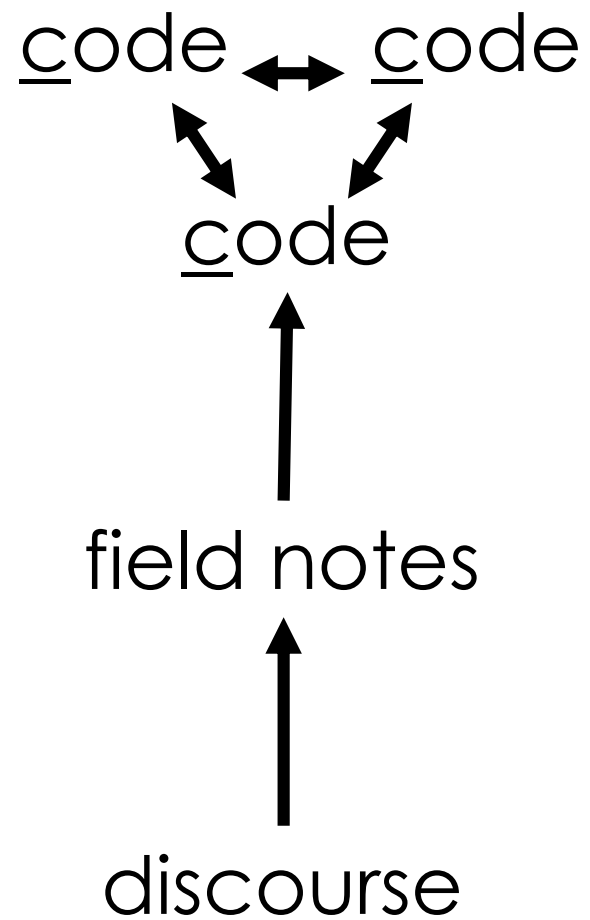
Culturally-relevant and meaningful
aspects of a DISCOURSE

codes

Things that count as evidence or
warrants for CODES

Virtual Internships

Technical Requirements	Discussion of one or more criteria for device functionality: agility, payload, cost, recharge interval, and/or safety.	<i>The reason only one met the required payload is probably because PAM is not the best choice.</i>
Data	Referring to or justifying decisions based on numerical values, results tables, graphs, research papers, or relative quantities.	<i>if we can lift a payload of 564 N and we add 100 N more of metal, then our payload becomes 464 N</i>











code ↔ code

↙ ↘
code

↑
field notes

↑
discourse

→

CODE ↔ CODE

↙ ↘
CODE

↓
DISCOURSE

↓
culture



code ↔ code

code

field notes

discourse

CODE ↔ CODE

CODE

DISCOURSE

culture



code ↔ code

code

field notes

discourse

CODE ↔ CODE

CODE

DISCOURSE

culture



code ↔ code

code

CODE ↔ CODE

CODE

Theoretical Saturation

field notes

DISCOURSE

discourse

culture



code ↔ code

↙ ↘
code

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CODE ↔ CODE

↙ ↘
CODE

Theoretical Saturation

↑
field notes

↑
discourse

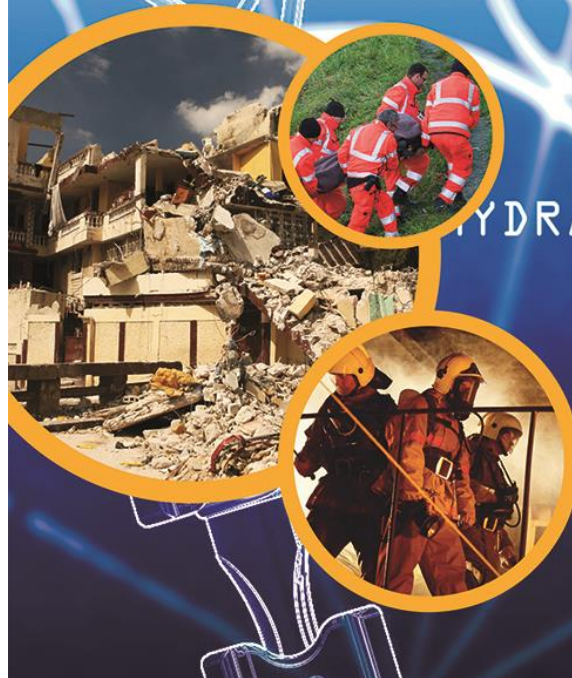
↓
DISCOURSE

↓
culture

RESCU+ SHELL

— RIZOELECTRIC
CONTROL SENS

HYDRAULIC ACTUAT



Justin Kim Please take a moment to introduce yourselves and indicate what actuator you have experience with.

Elizabeth E. Hi everybody!

Gabrielle F. Hi I'm Gabby

Elizabeth E. I'm Elizabeth, and I spent the first part of this internship working with PAM

Gabrielle F. I'm from Pneumatic

Lena H. I am Lena and I worked with electric

Justin Kim

Please take a moment to introduce yourselves and indicate what actuator you have experience with.

Elizabeth E.

Hi everybody!

Gabrielle F.

Hi I'm Gabby

Elizabeth E.

I'm Elizabeth, and I spent the first part of this internship working with PAM

Gabrielle F.

I'm from Pneumatic

Lena H.

I am Lena and I worked with electric

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Hi I'm Gabby

Elizabeth E.

I'm Elizabeth, and I spent the first part of this internship working with PAM

Gabrielle F.

I'm from Pneumatic

Lena H.

I am Lena and I worked with electric

Zachary H.	For hydraulic, payload and recharge interval were strengths, but safety was close to the company requirement.
Daniel M.	Elizabeth that was very similar to my group. We were able to reach all internal consultant requests, but the machine costed a lot.
Gabrielle F.	We used Pneumatic and it seemed to meet everyone's required and most preferred!
Gabrielle F.	Ourcost always met preferred costs
Lena H.	Yes and electric, depending on the other aspects, also met all required and most preferred
Michael T.	What were the results of the best prototype for pneumatic and electric?

Zachary H.	For hydraulic, payload and recharge interval were strengths, but safety was close to the company requirement.	Technical Requirements
Daniel M.	Elizabeth that was very similar to my group. We were able to reach all internal consultant requests, but the machine costed a lot.	
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DATA

TECHNICAL
REQUIREMENTS

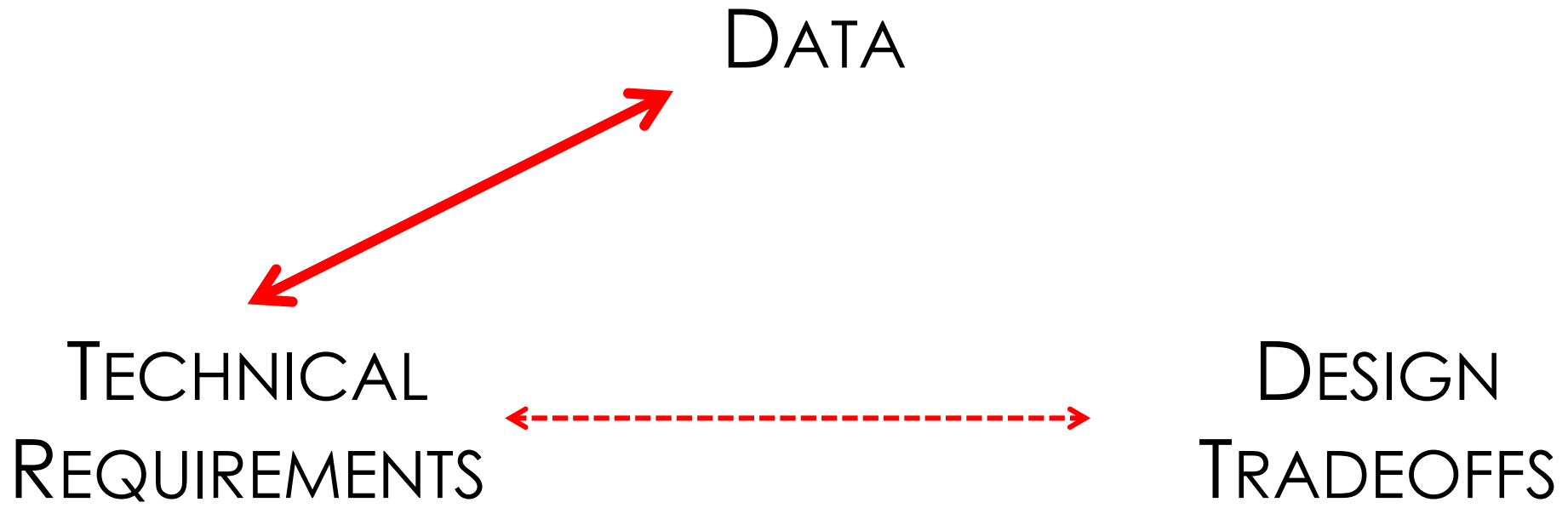
DESIGN
TRADEOFFS

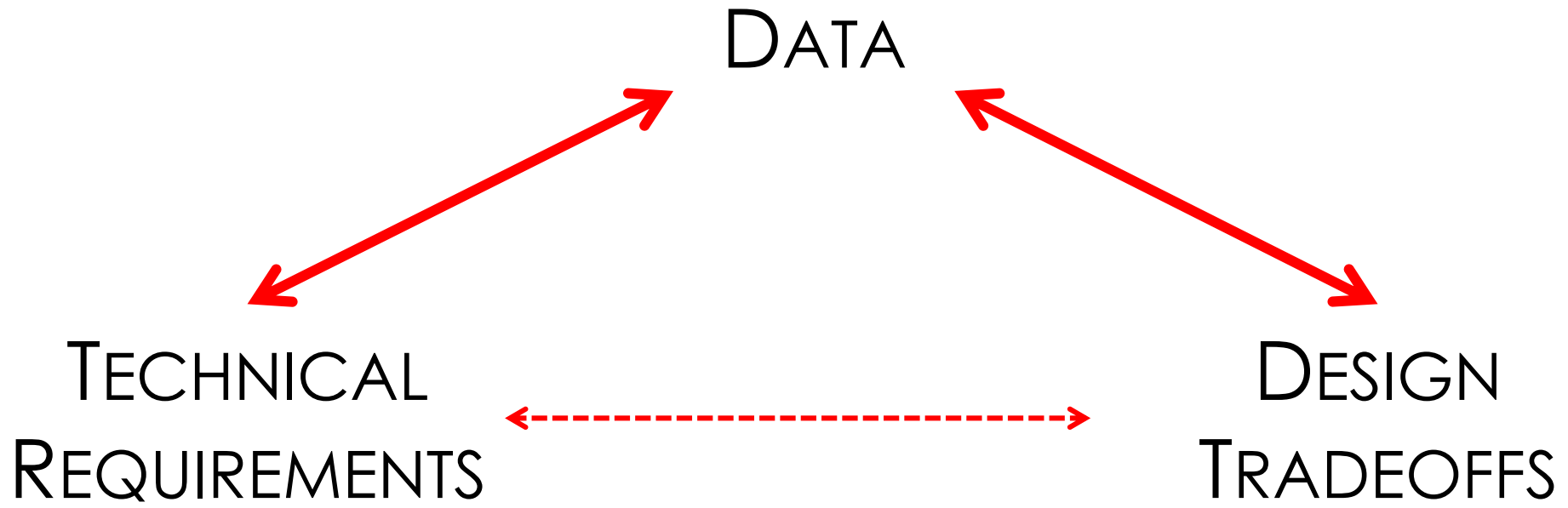
DATA

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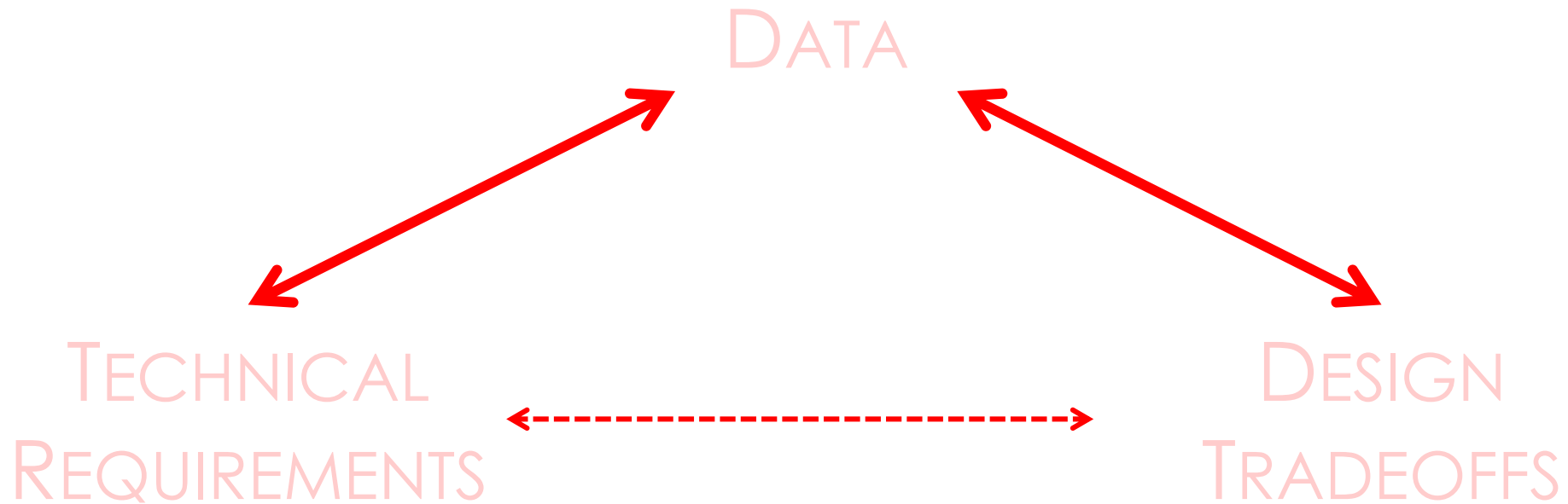


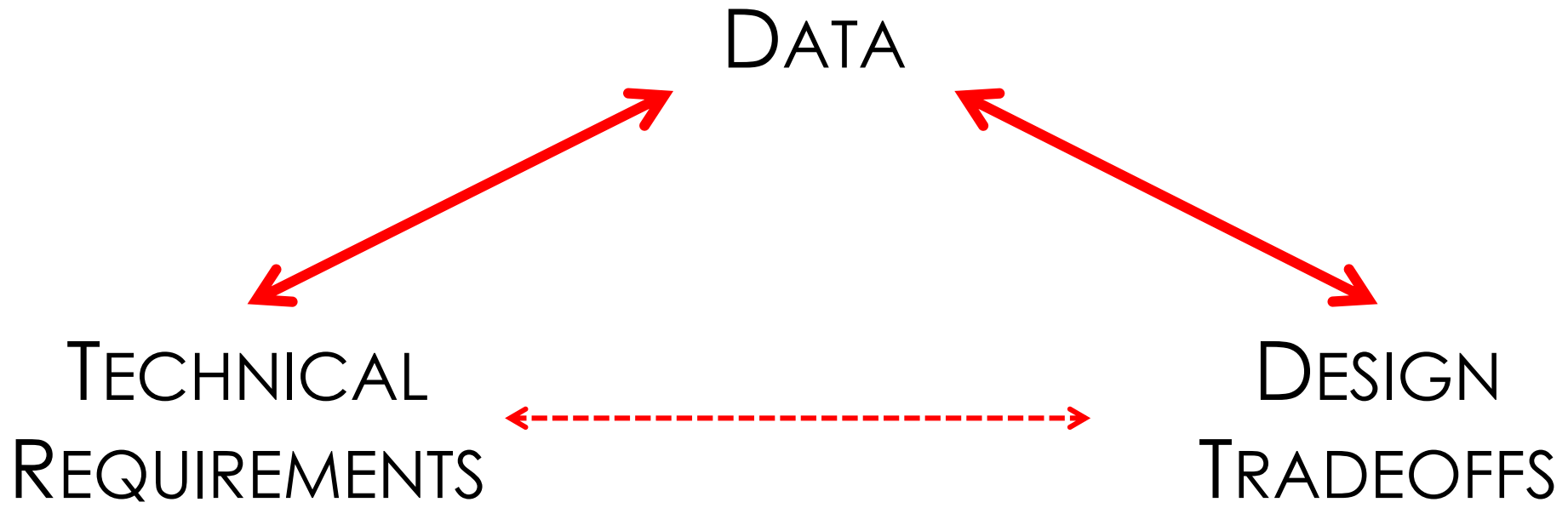
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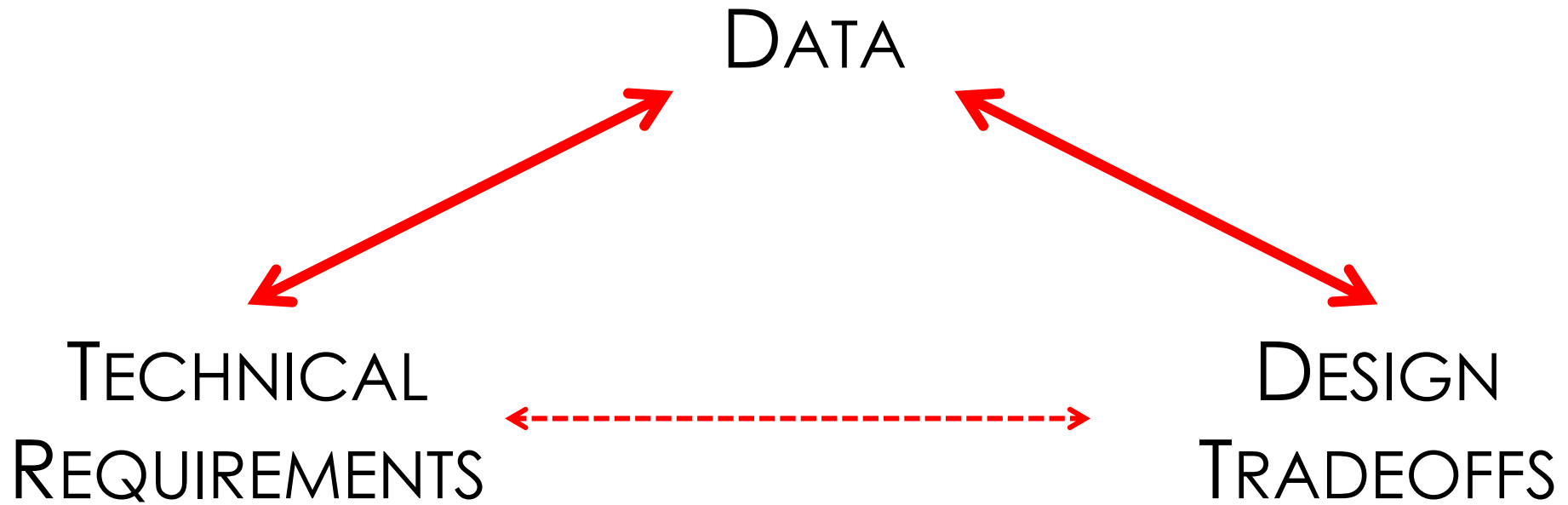




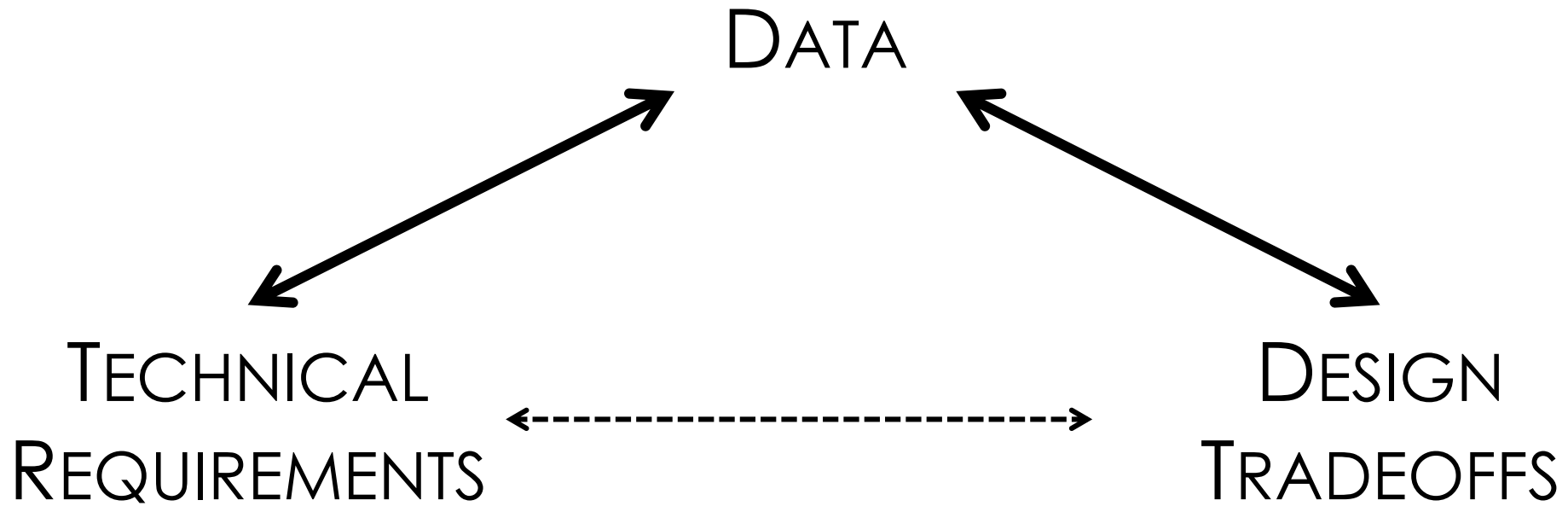
Can you draw a diagram about how your codes are related?

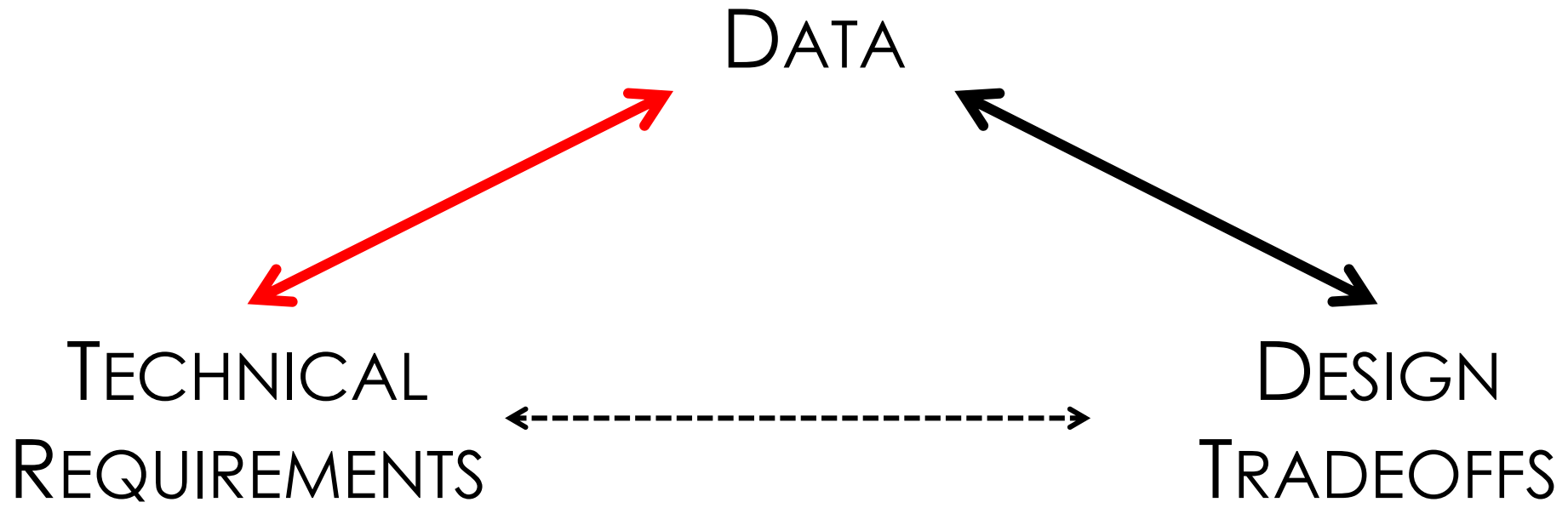






Theoretical Saturation





[7/23 11:04AM] **Fernando** - @Team 3: How do you attach your batch to your notebook?

[7/23 11:04AM] **James** - @Team 3: its the middle option at the bottom

[7/23 11:05AM] **Fernando** - @Team 3: But when I click it, it opens up a new notebook entry.

[7/23 11:05AM] **Jam**

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[7/23 11:05AM] **Jeth**

clip on the top right o

[7/23 11:06AM] **Fern**

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Technical Requirements

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Design Tradeoffs

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Moving Window

I slightly prioritized agility in order to meet Shawn Edwards' recommendations.
I chose light materials because I believe they would like something comfortable to wear
Yeah I agree
I was reviewing Paulo Henriquez's requests and he was most focused on safety.
But recharge interval may be irritating if too low
Rescue workers are concerned about safety

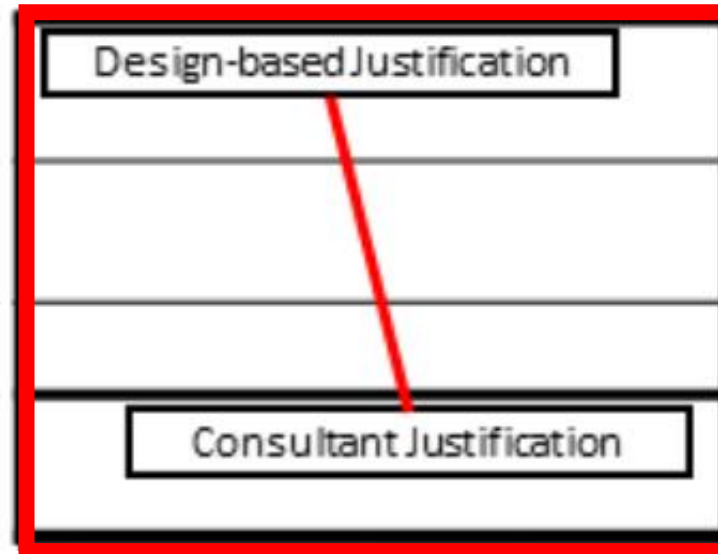
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Consultant Justification

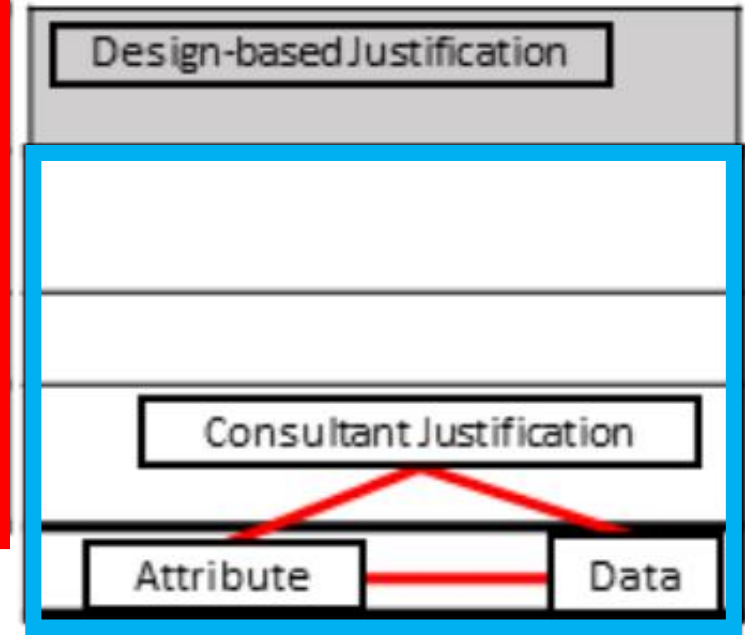
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Moving Window

text

Hello Justin and Team, I'm Robert. I worked with the Pneumatic team before.

Hi, I am Akash and I worked with the electric actuator before this group.

Hello, I am Amirah. I previously worked with Series Elastic actuator.

Hi, I am Peter. I previously worked with the series elastic team

Hello, I am Jimmy and I worked with the Hydraulic actuator on my previous team

yes i am. and i already posted in the chat that i previously worked with series elastic team.

I worked with the Pneumatic Actuator. For a quick review, its strengths lie in that it is energy

Ok I had the electric actuator and we kept what we found was as ROM went up the agility a

So Hydraulic actuators use fluid to generate work with a piston. It can generate the highest

I researched the series electric actuator. The series elastic actuator had a larger payload, but

I am wondering, did anybody have a prototype that was able to meet the internal consultant

No, my previous group was not able to meet any of the requests from the internal consultant

Morning everyone.

Anything we should be doing in the meantime?

Yep, completed yesterday.

@Justin Kim: Forgive me, but I'm fairly uninformed of the instructions on said presentation.

Oh, I see that now

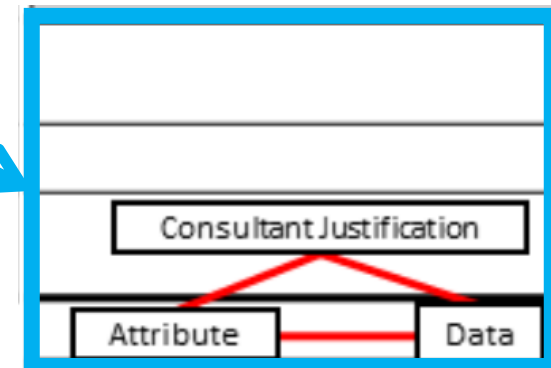
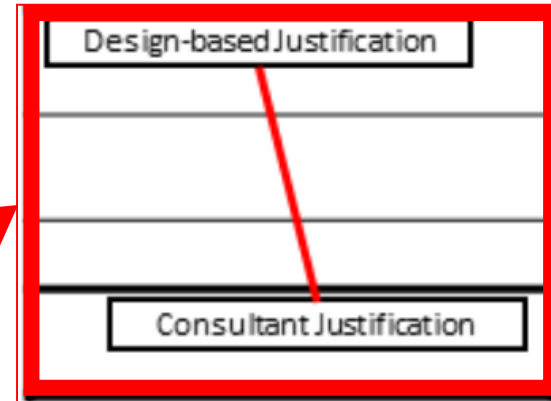
Yup, I just saw the email from Vedant

@Justin Kim: Would you mind clarifying: the individual presentation and poster presentation

@Devin: So by working on the presentation, you mean simply prepare relevant information

@Justin Kim: Woops, meant so send that to you and not myself.

I submitted my first notebook and now I'm working on the second one about the REDD and



Technical Requirements

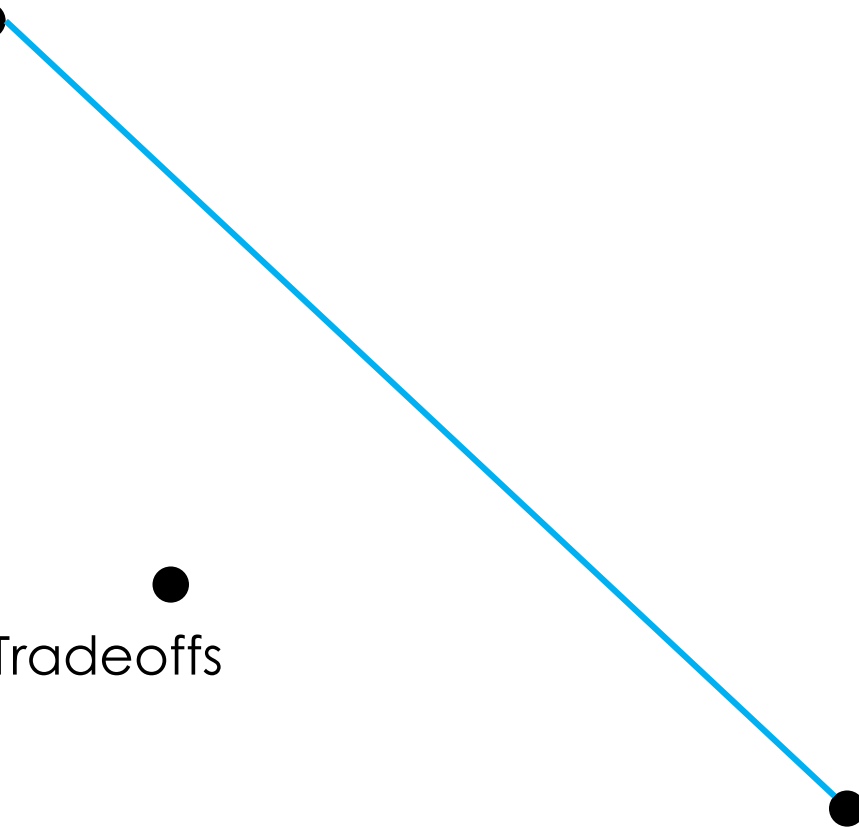


Design Tradeoffs



Data

Collaboration



Technical Requirements

Design Tradeoffs

Data

Collaboration ●



Technical Requirements



Design Tradeoffs



Data

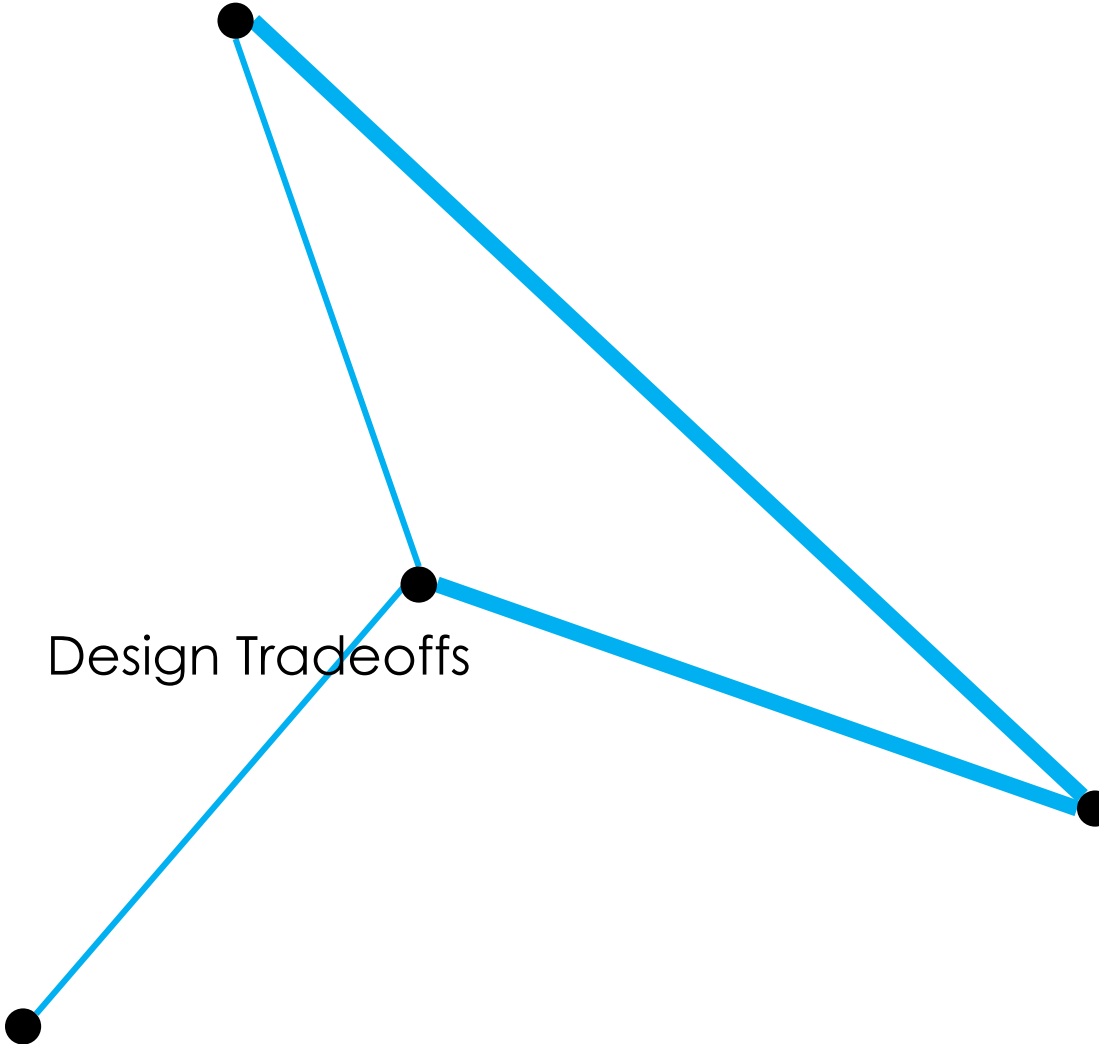
Collaboration ●

Technical Requirements

Design Tradeoffs

Data

Collaboration



Technical Requirements



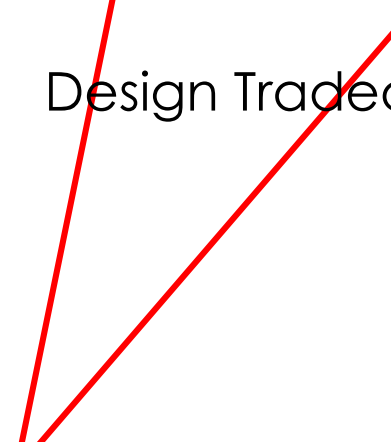
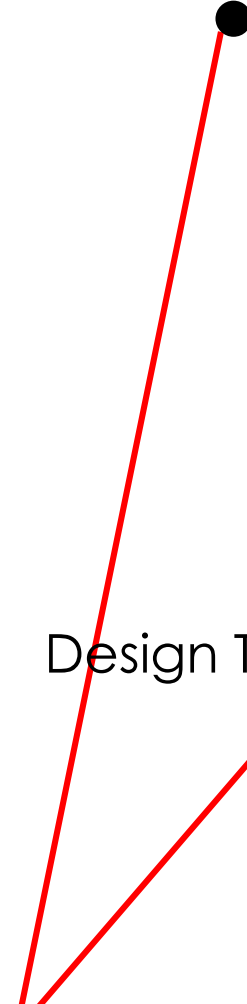
Design Tradeoffs



Collaboration



Data



Technical Requirements



Design Tradeoffs



Collaboration



Data

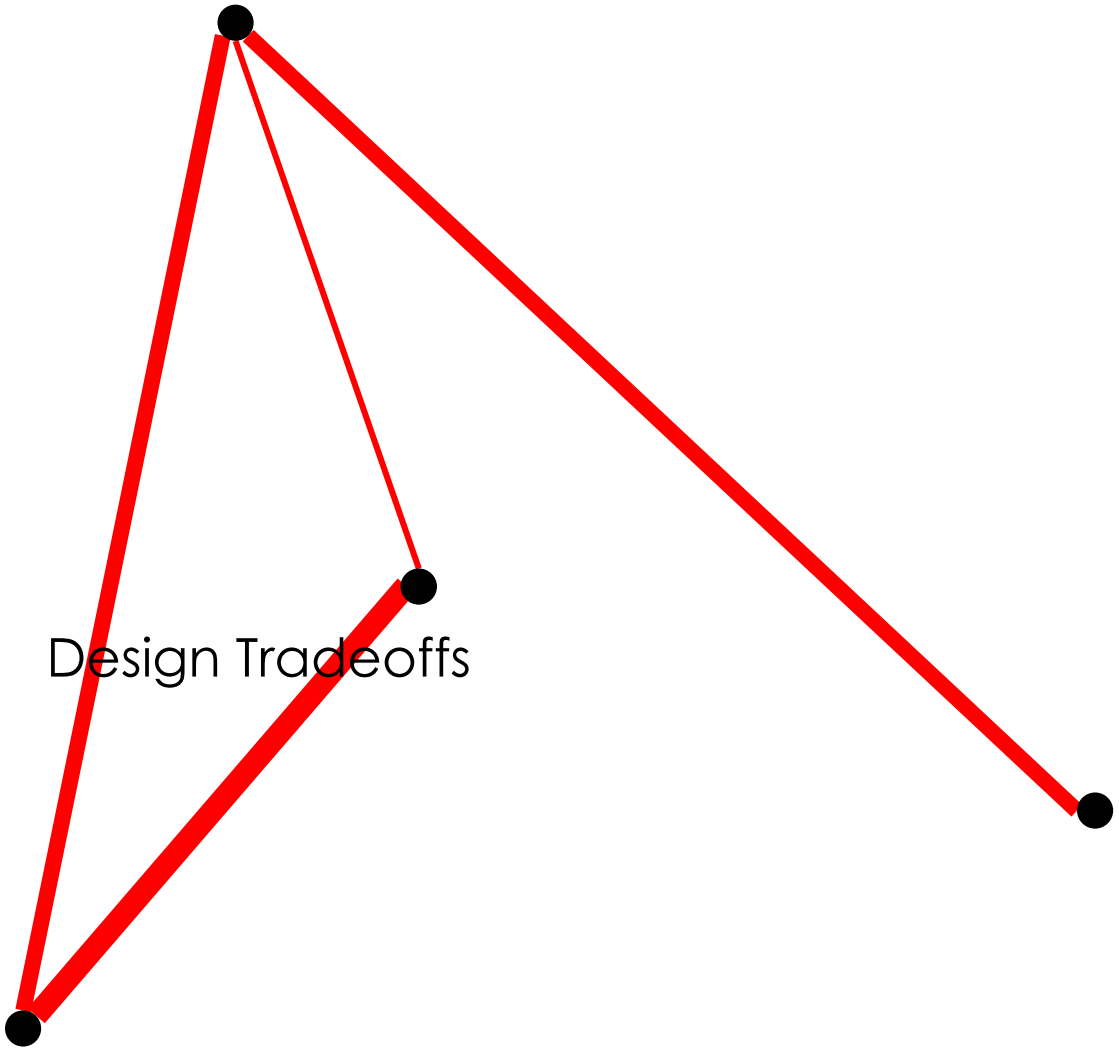


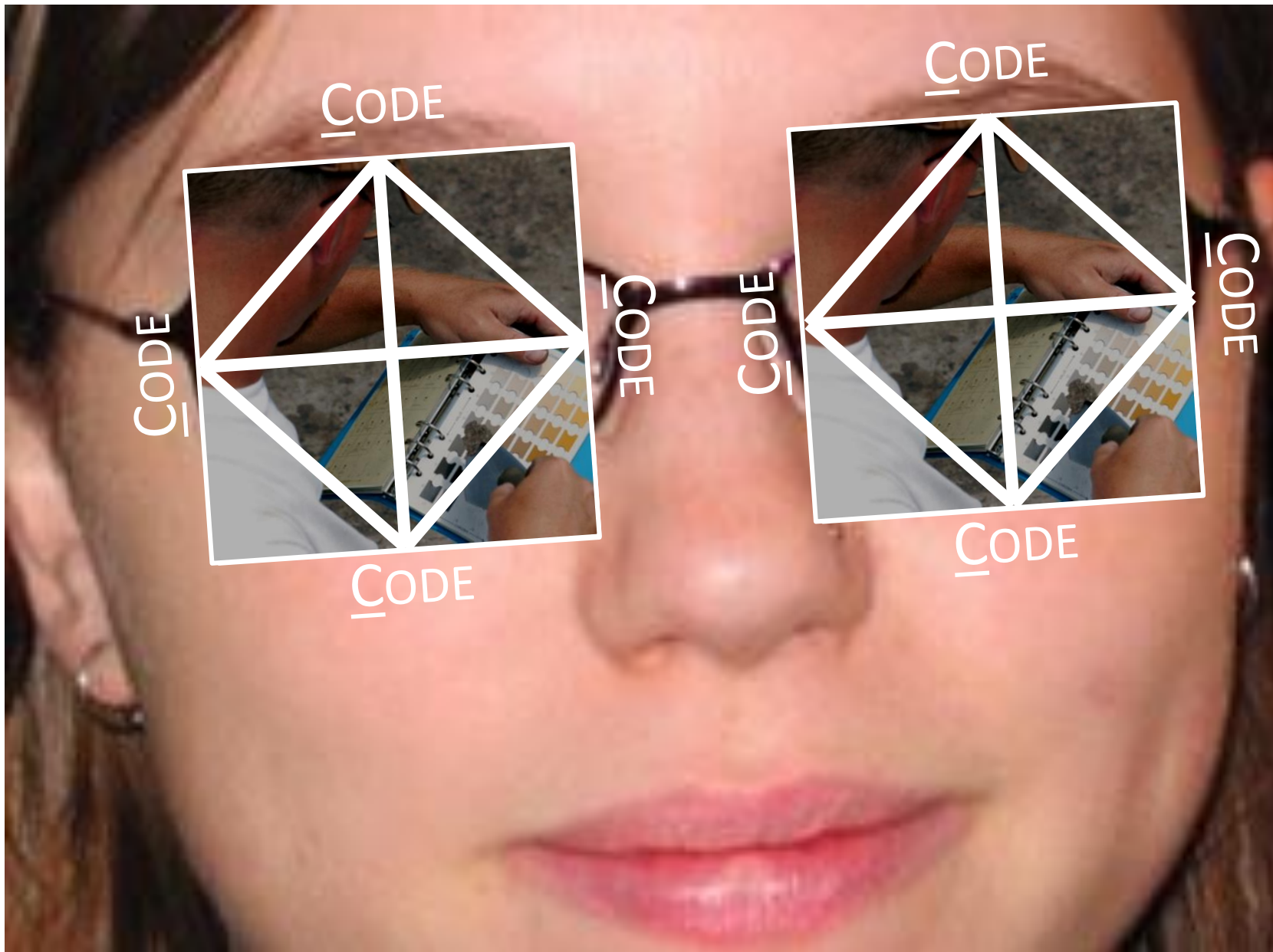
Technical Requirements

Design Tradeoffs

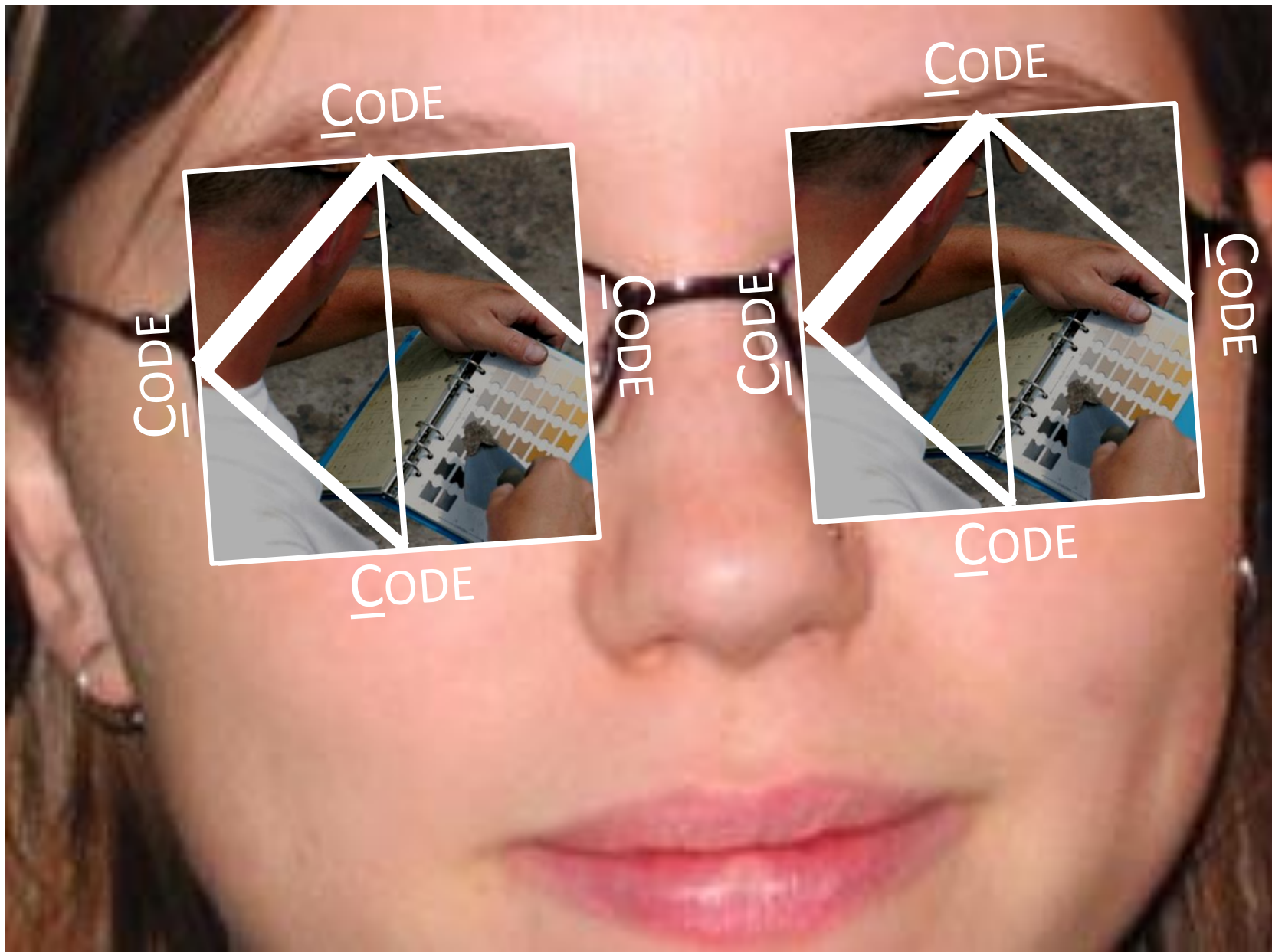
Data

Collaboration





Epistemic Frame



Epistemic Frame

EPISTEMIC NETWORK ANALYSIS (ENA)

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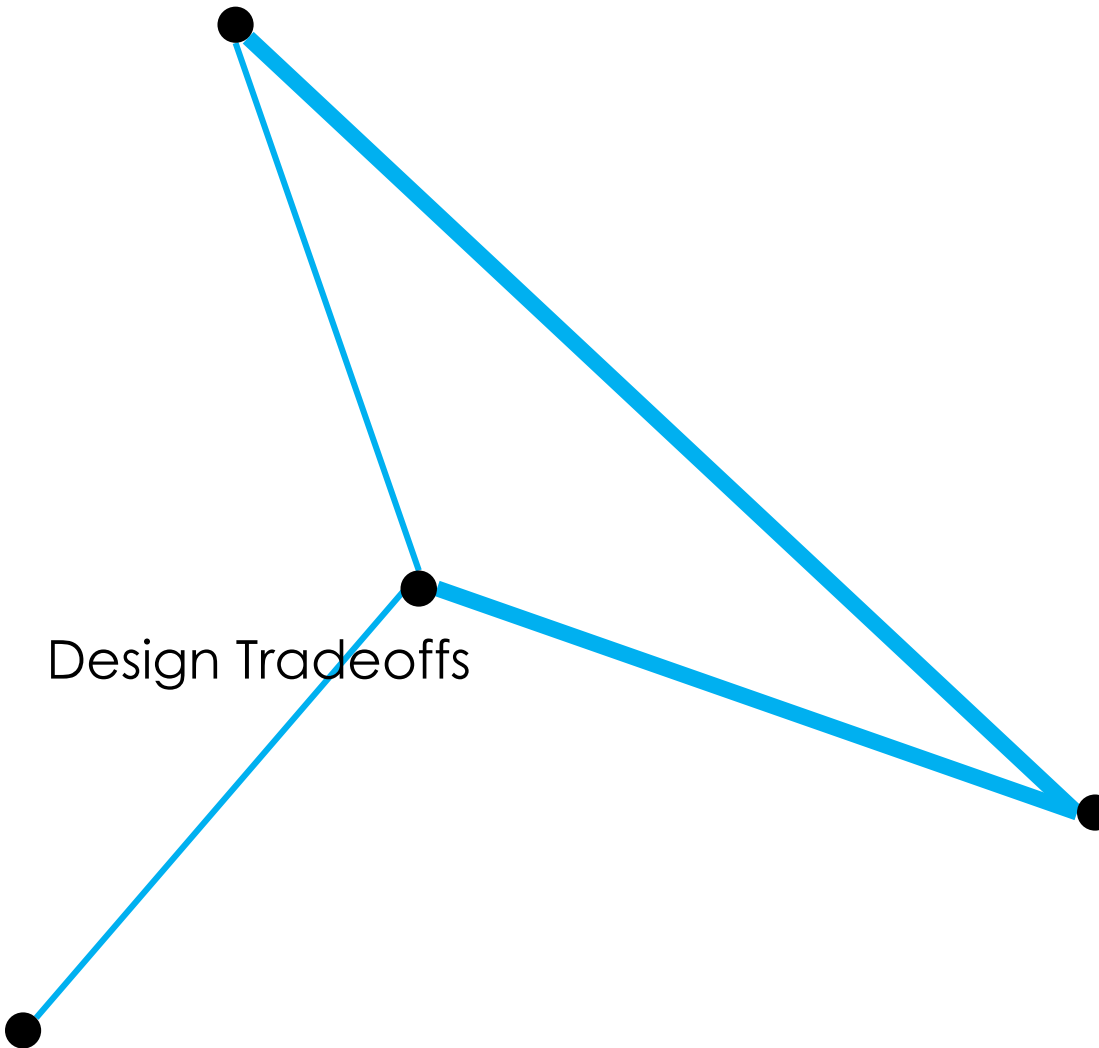
<https://m.youtube.com/watch?v=RI8b3x85MVE>

Technical Requirements

Design Tradeoffs

Data

Collaboration

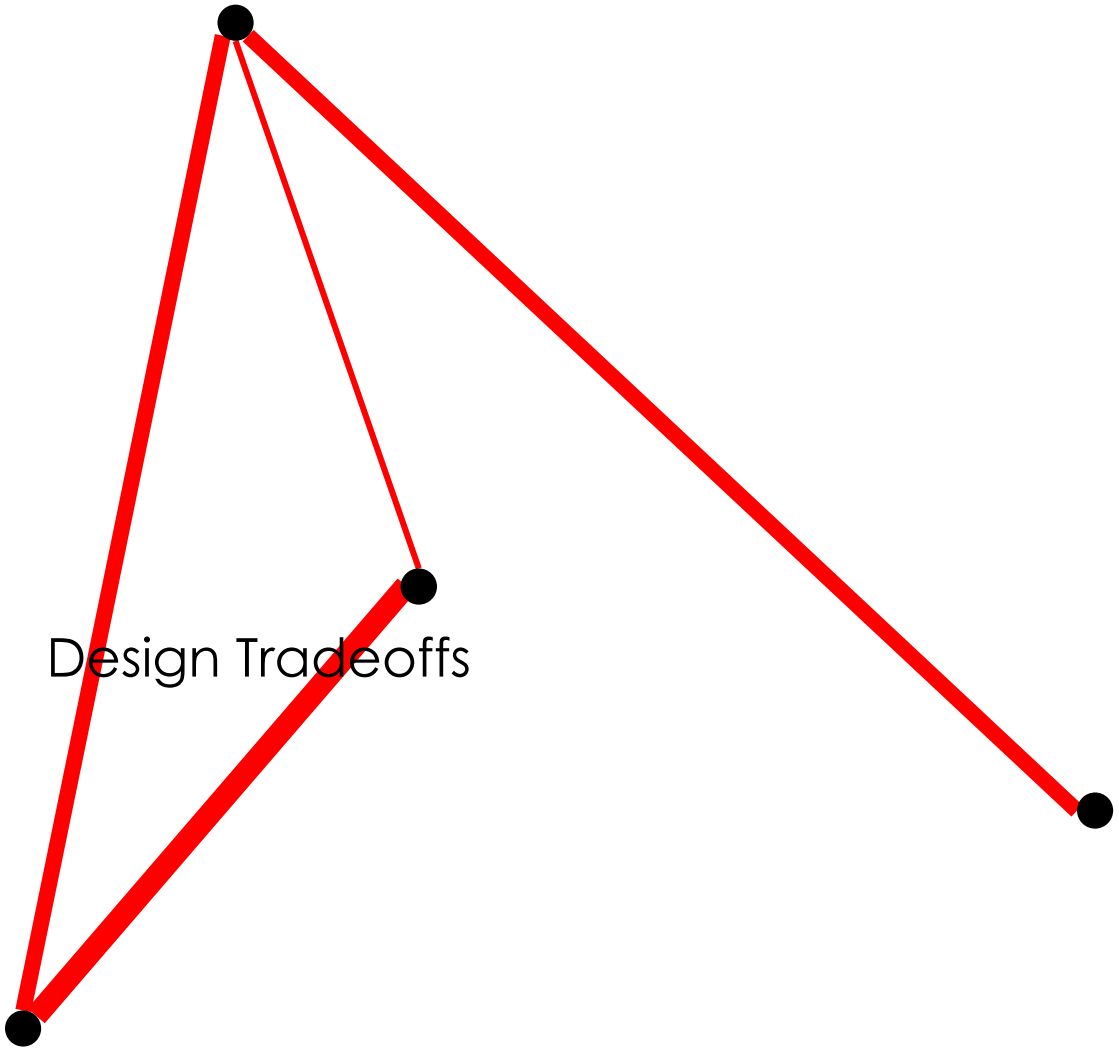


Technical Requirements

Design Tradeoffs

Data

Collaboration

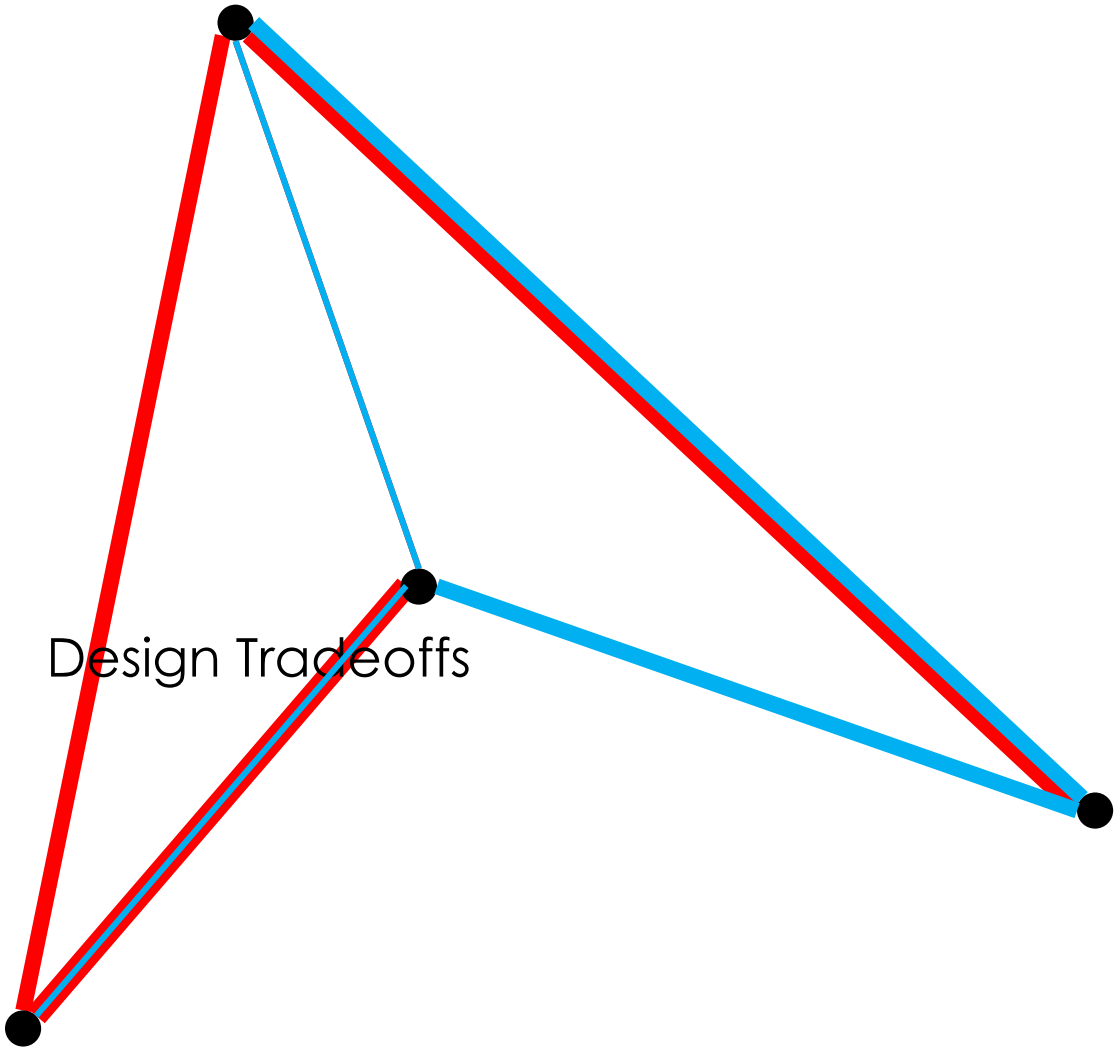


Technical Requirements

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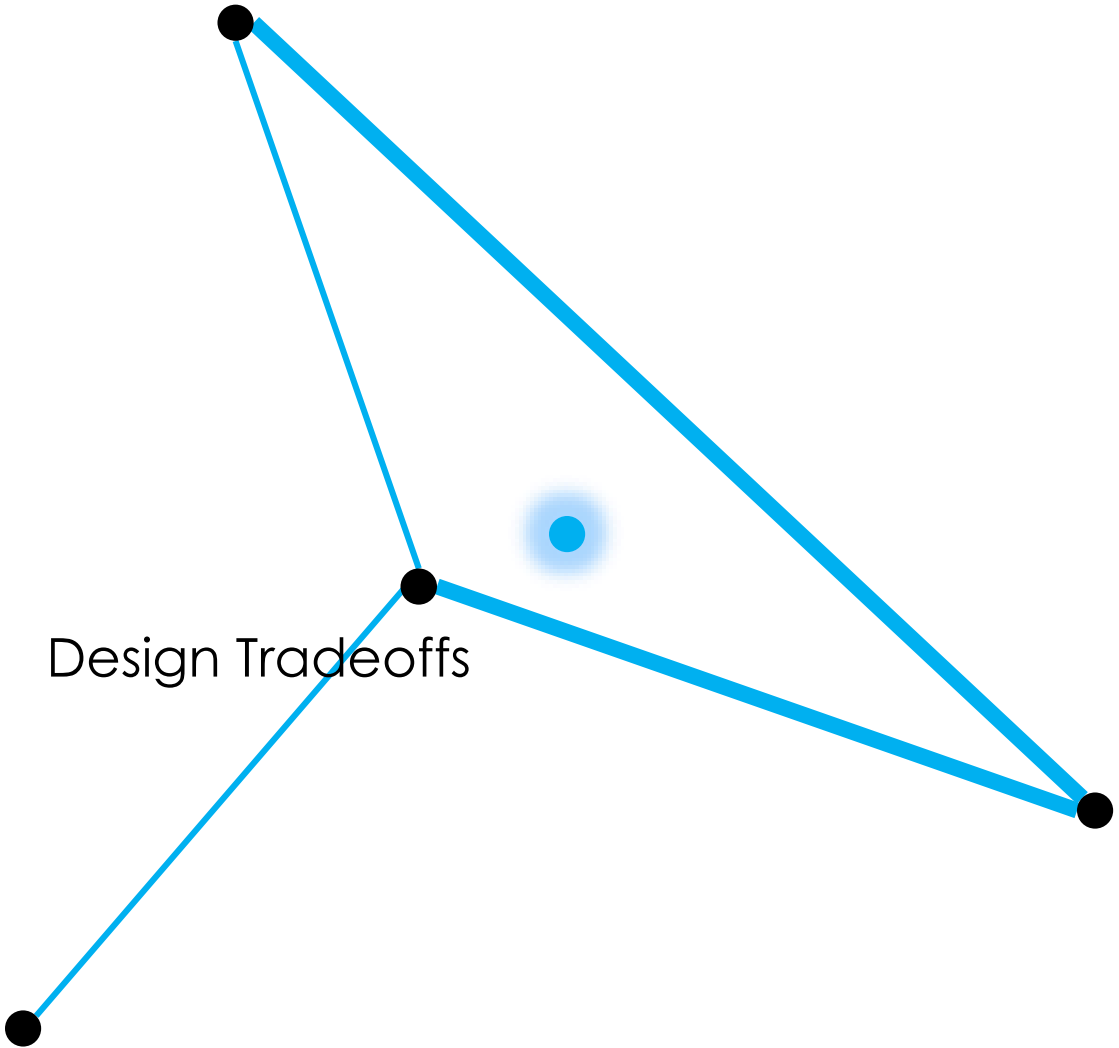


Technical Requirements

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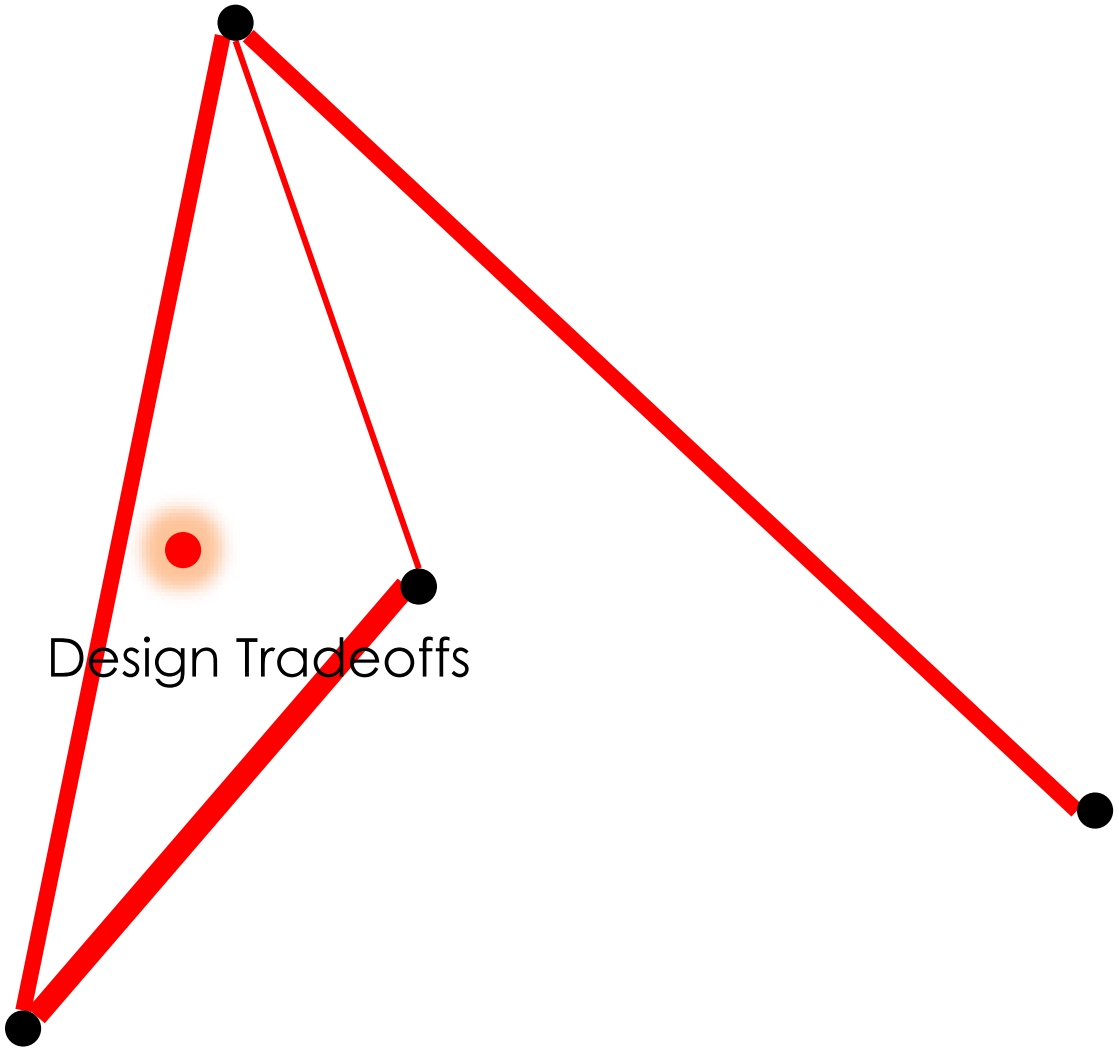


Technical Requirements

Collaboration

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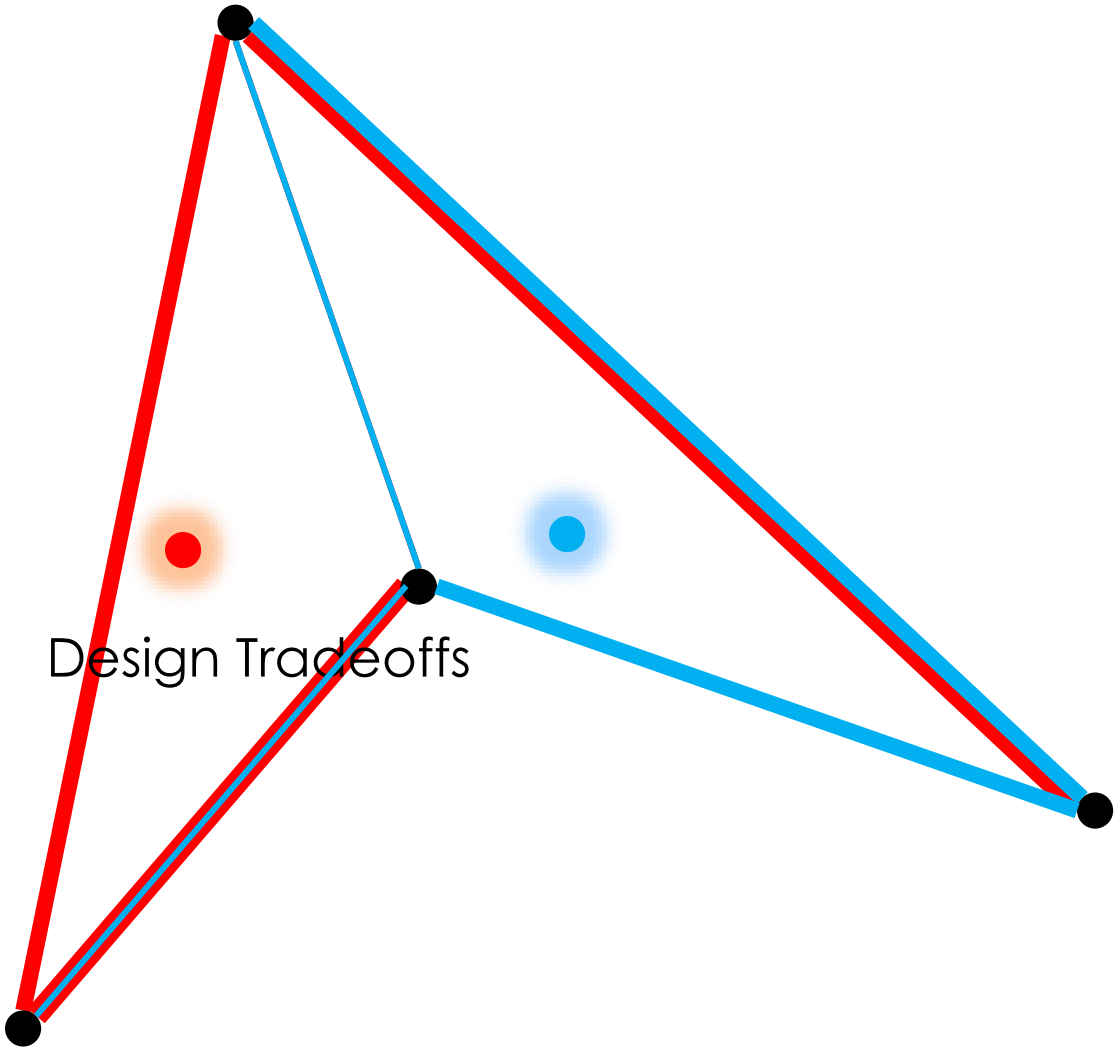


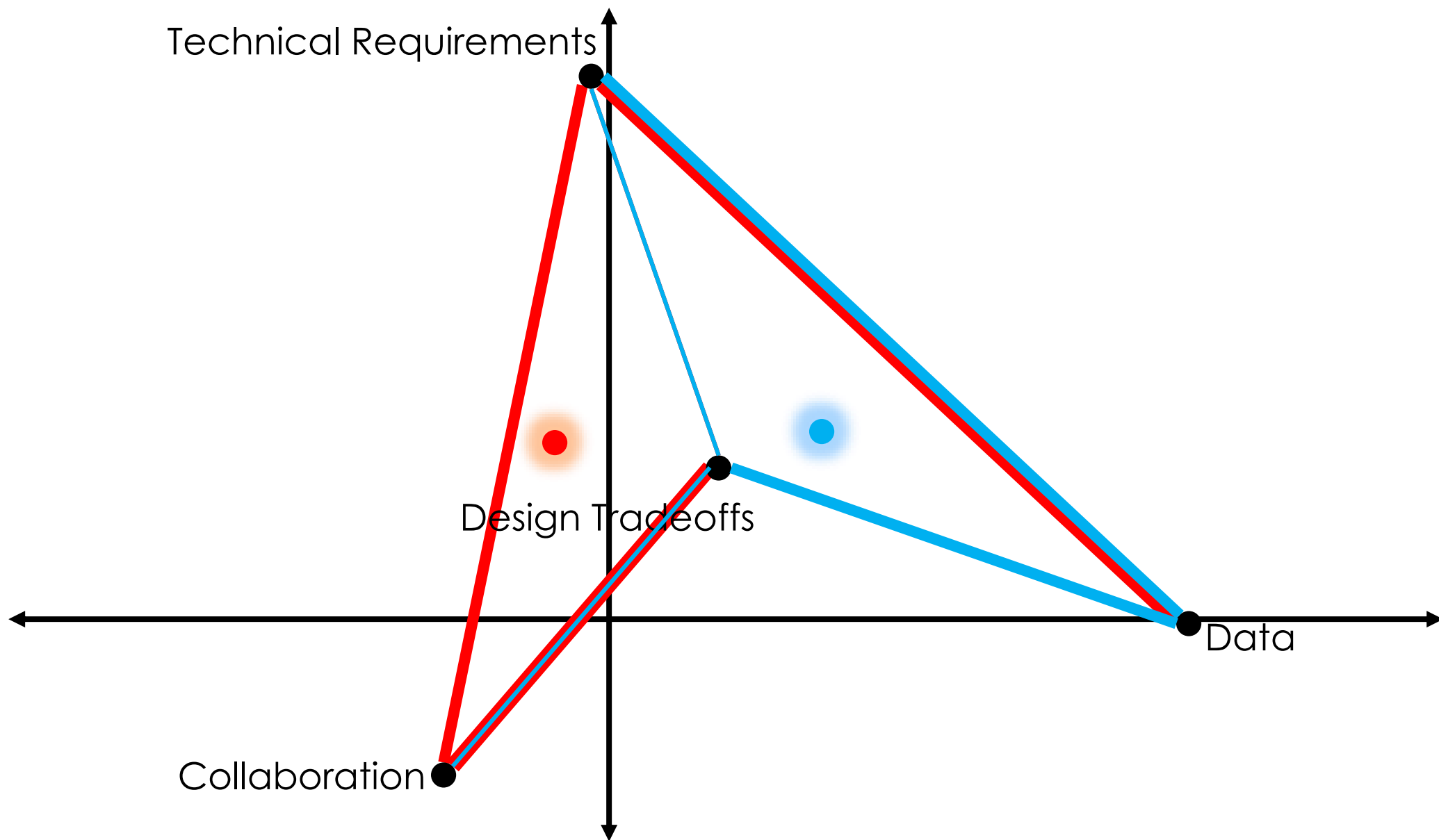
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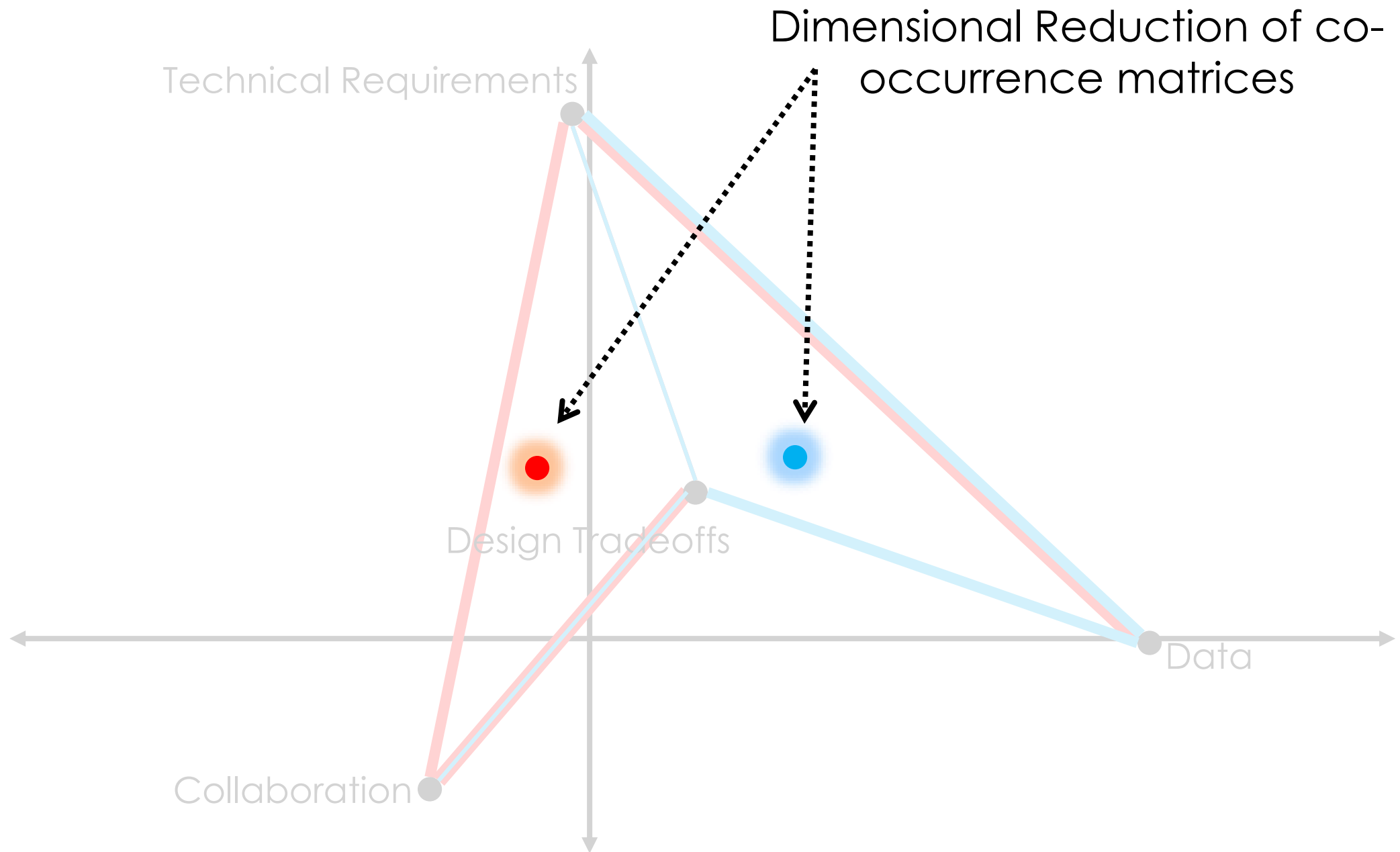
Collaboration

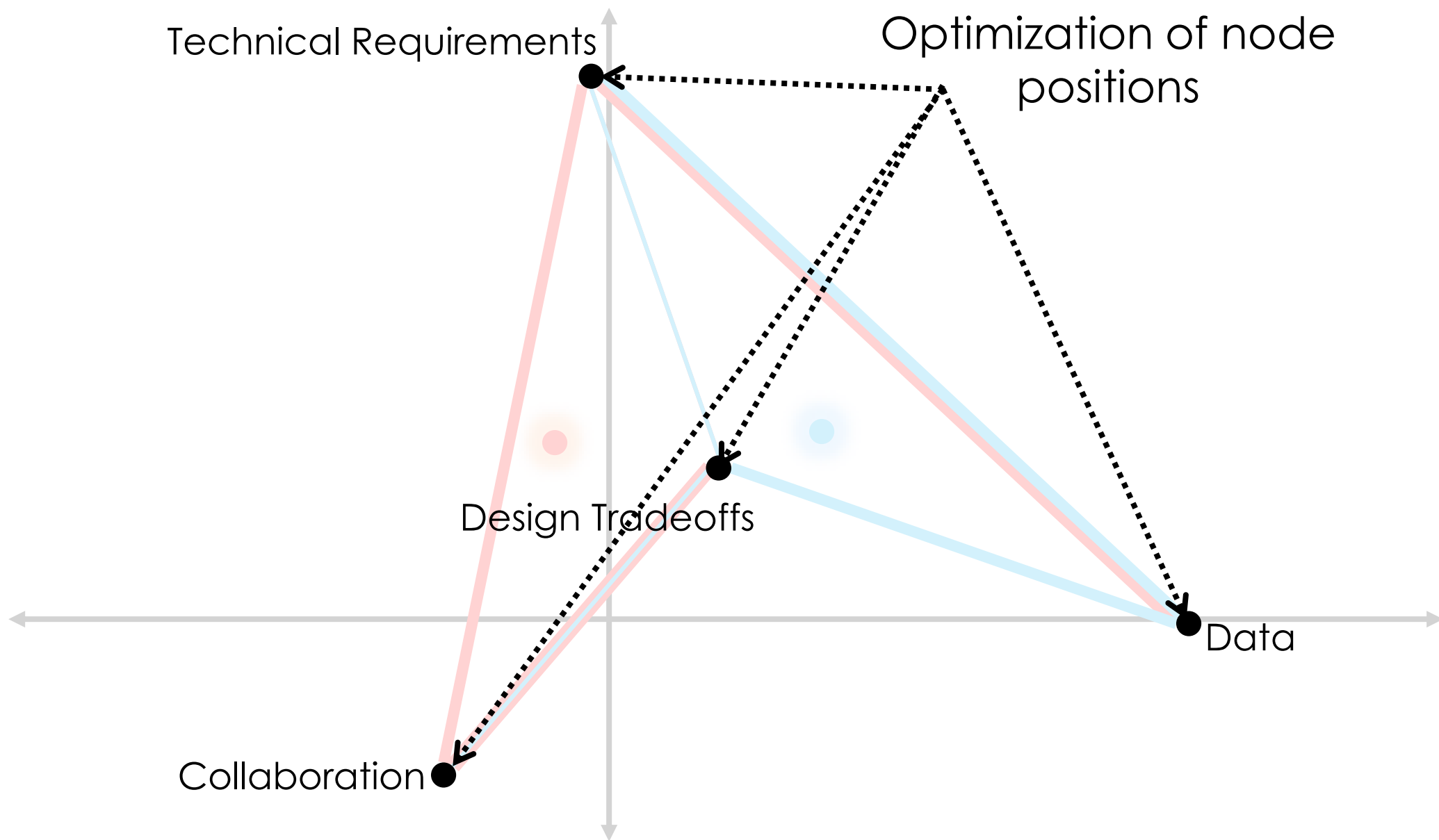
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Design Tradeoffs









Technical Requirements



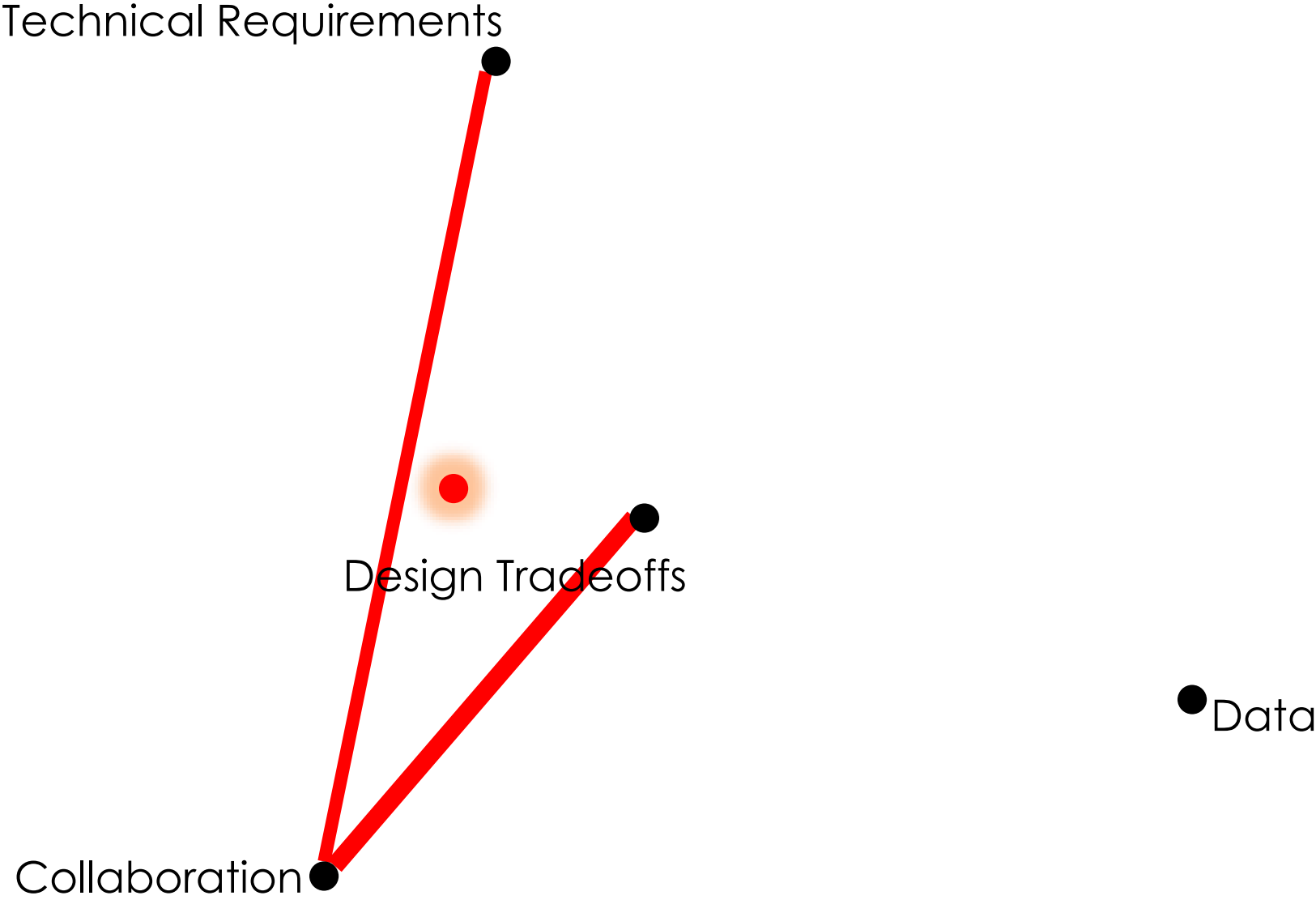
Design Tradeoffs



Collaboration



Data



Technical Requirements



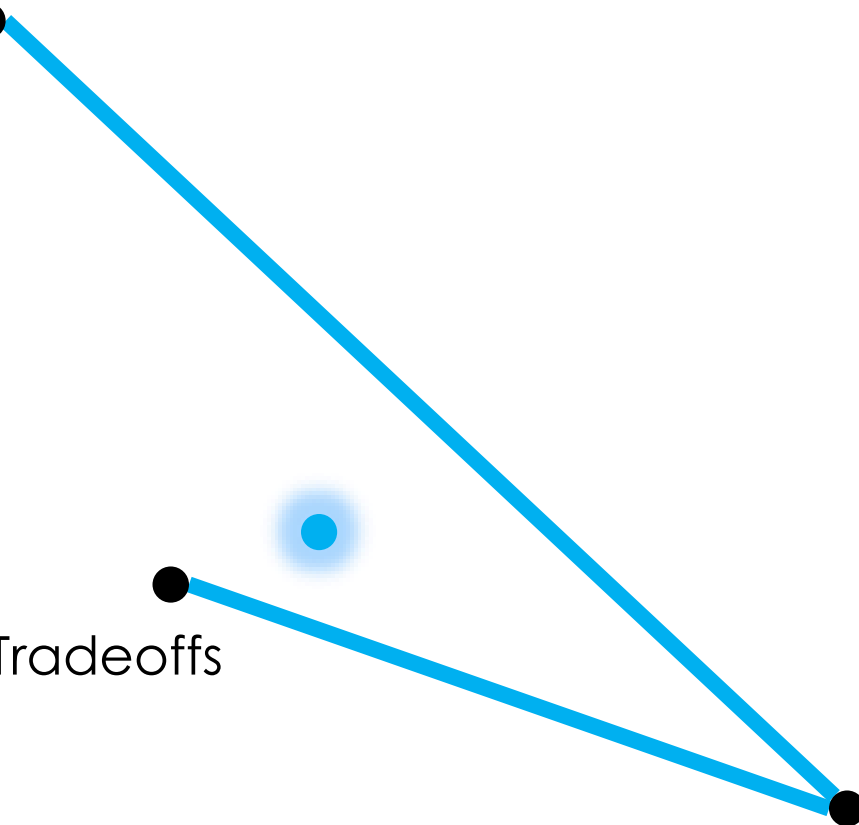
Design Tradeoffs



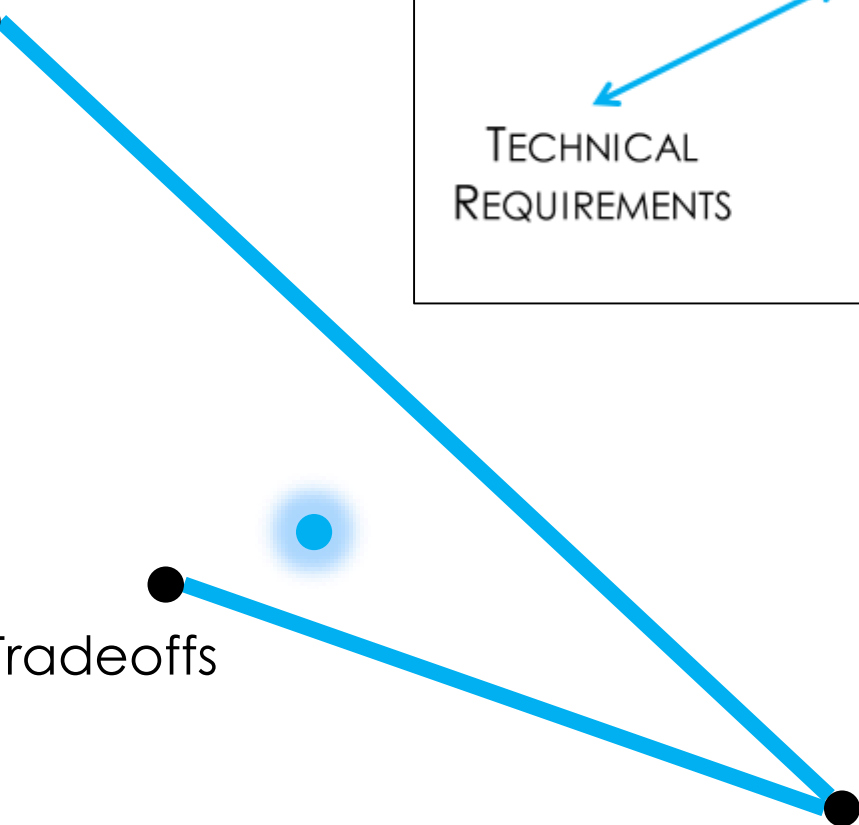
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Collaboration



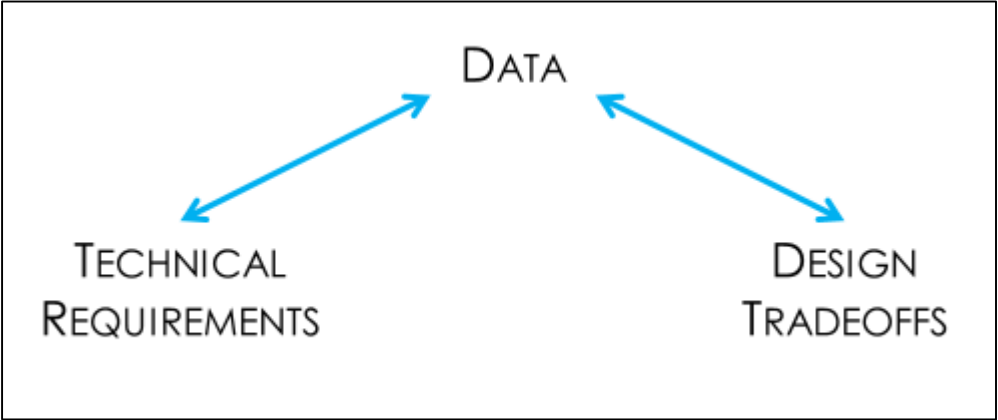
Technical Requirements



Design Tradeoffs

Data

Collaboration●



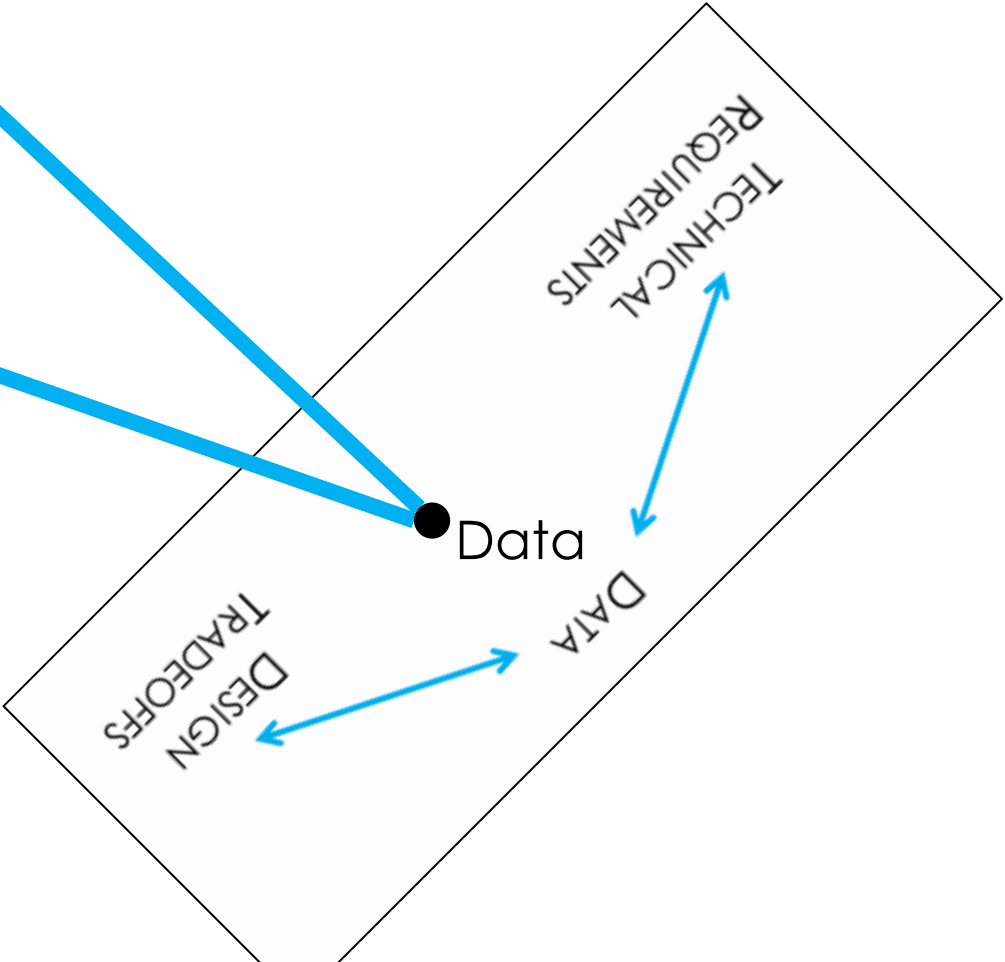
Technical Requirements



Design Tradeoffs



Collaboration ●



Data from N=50 students

1st year college students

25 novices

25 more advanced

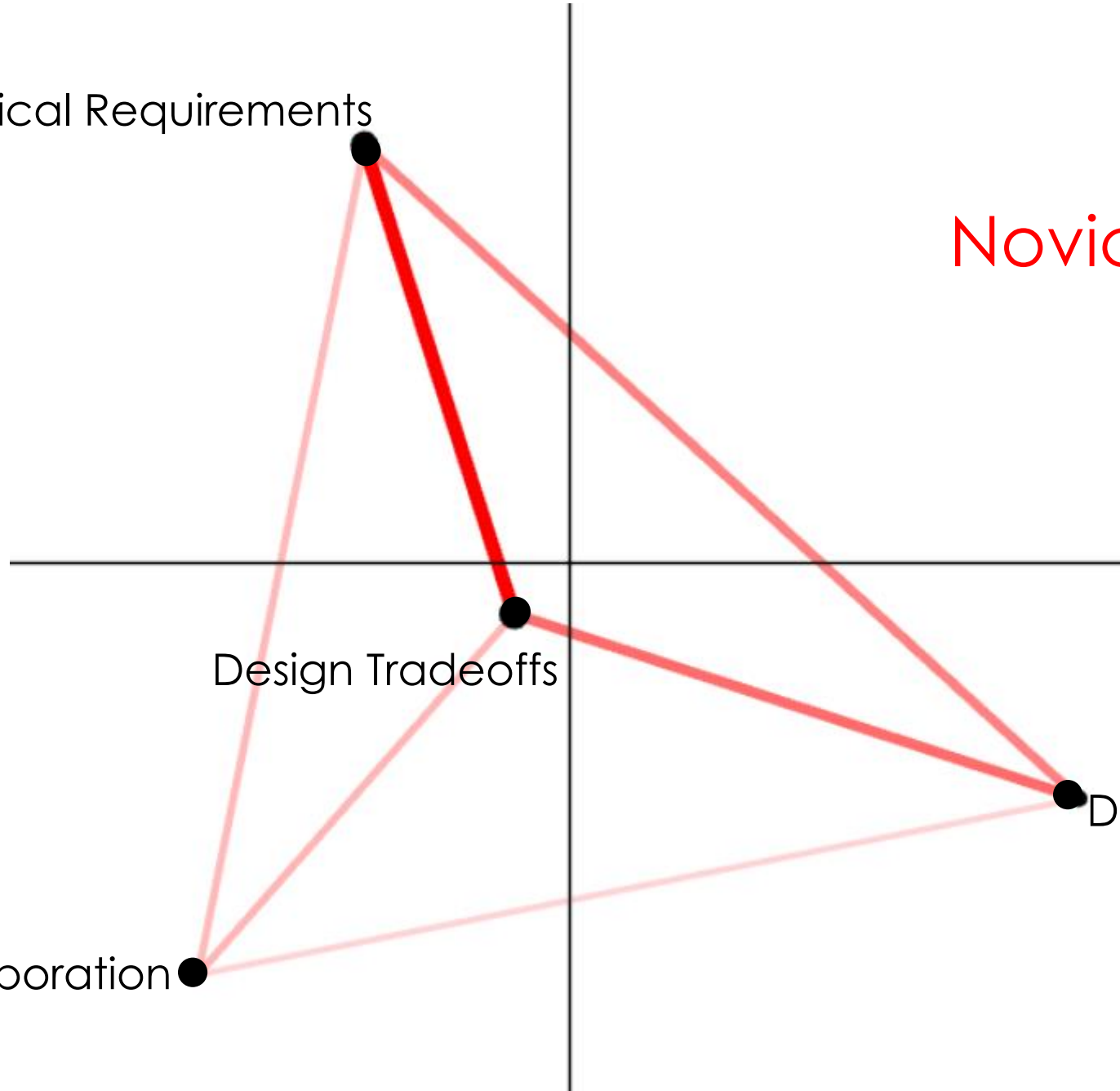
Technical Requirements

Novices

Design Tradeoffs

Data

Collaboration



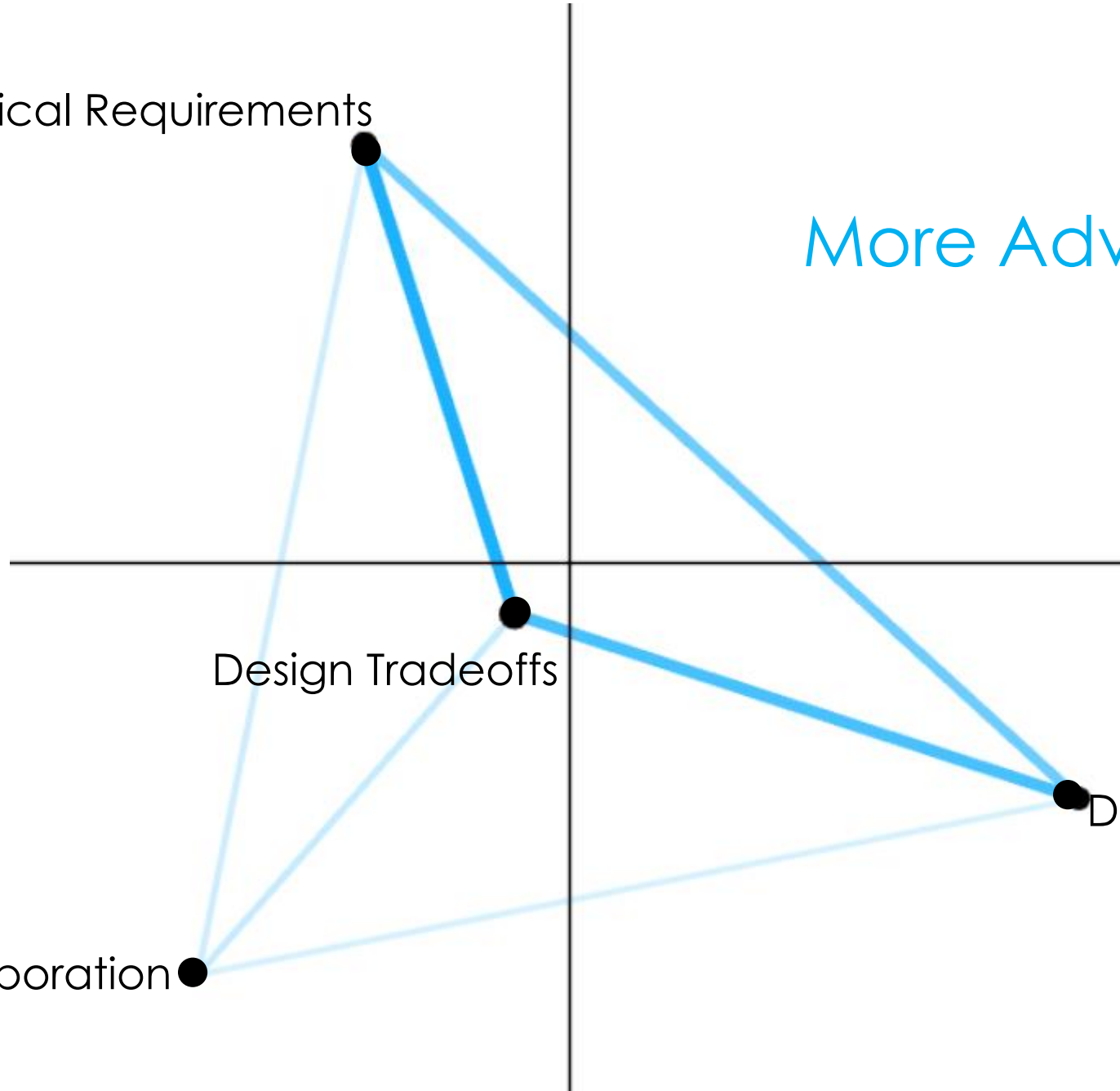
Technical Requirements

More Advanced

Design Tradeoffs

Data

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Novices

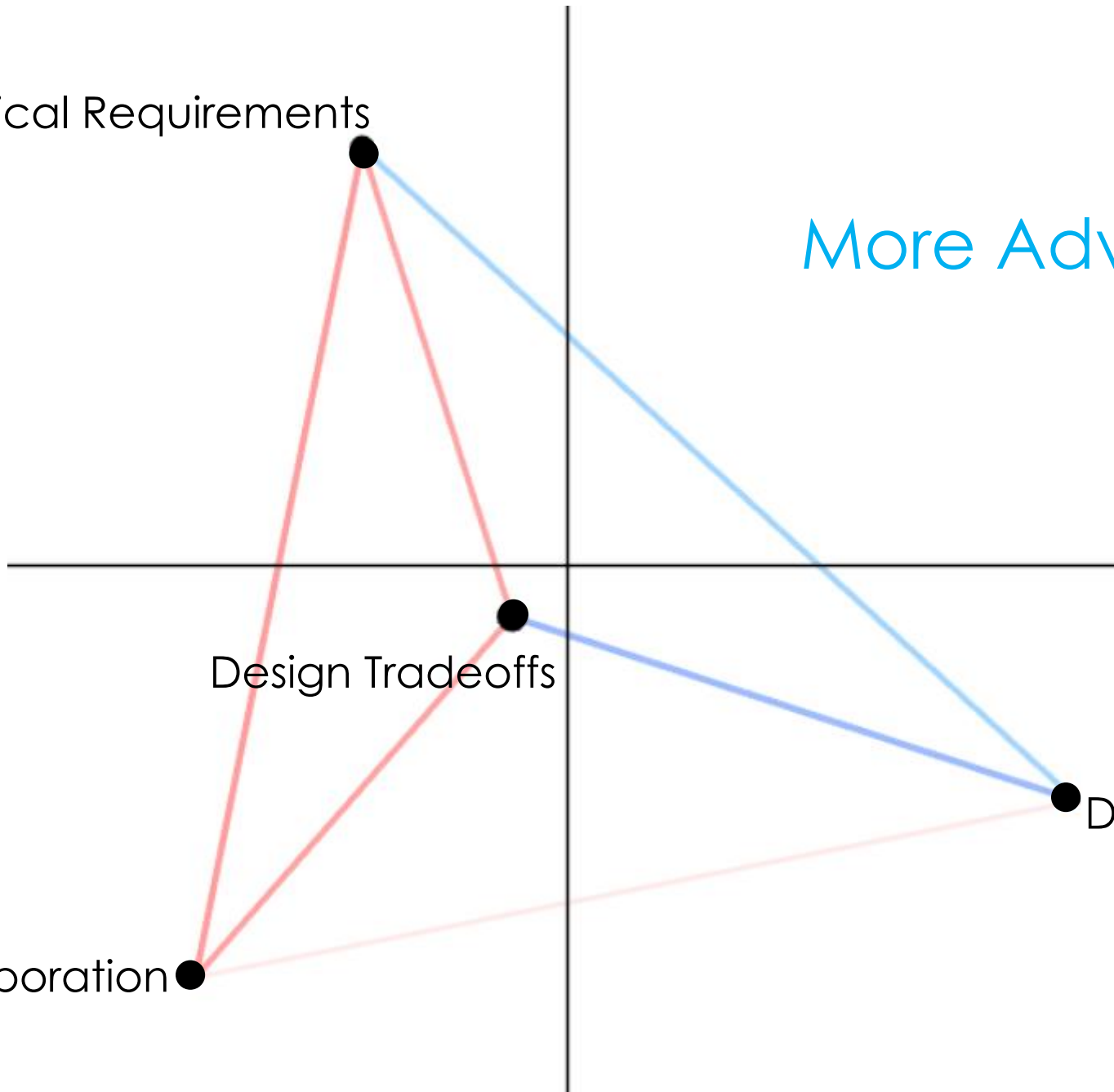
Technical Requirements

More Advanced

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Novices

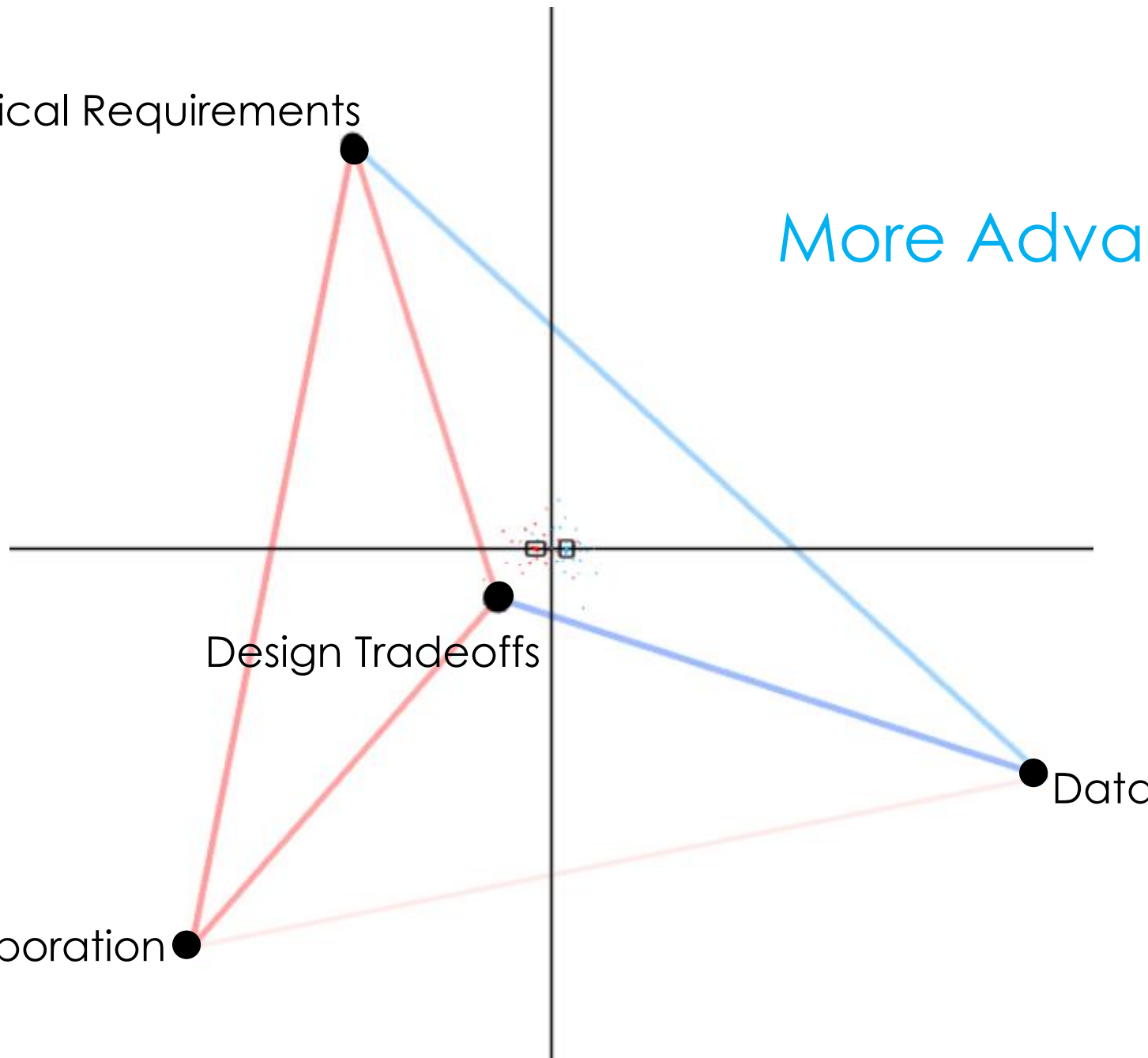
More Advanced

Technical Requirements

Design Tradeoffs

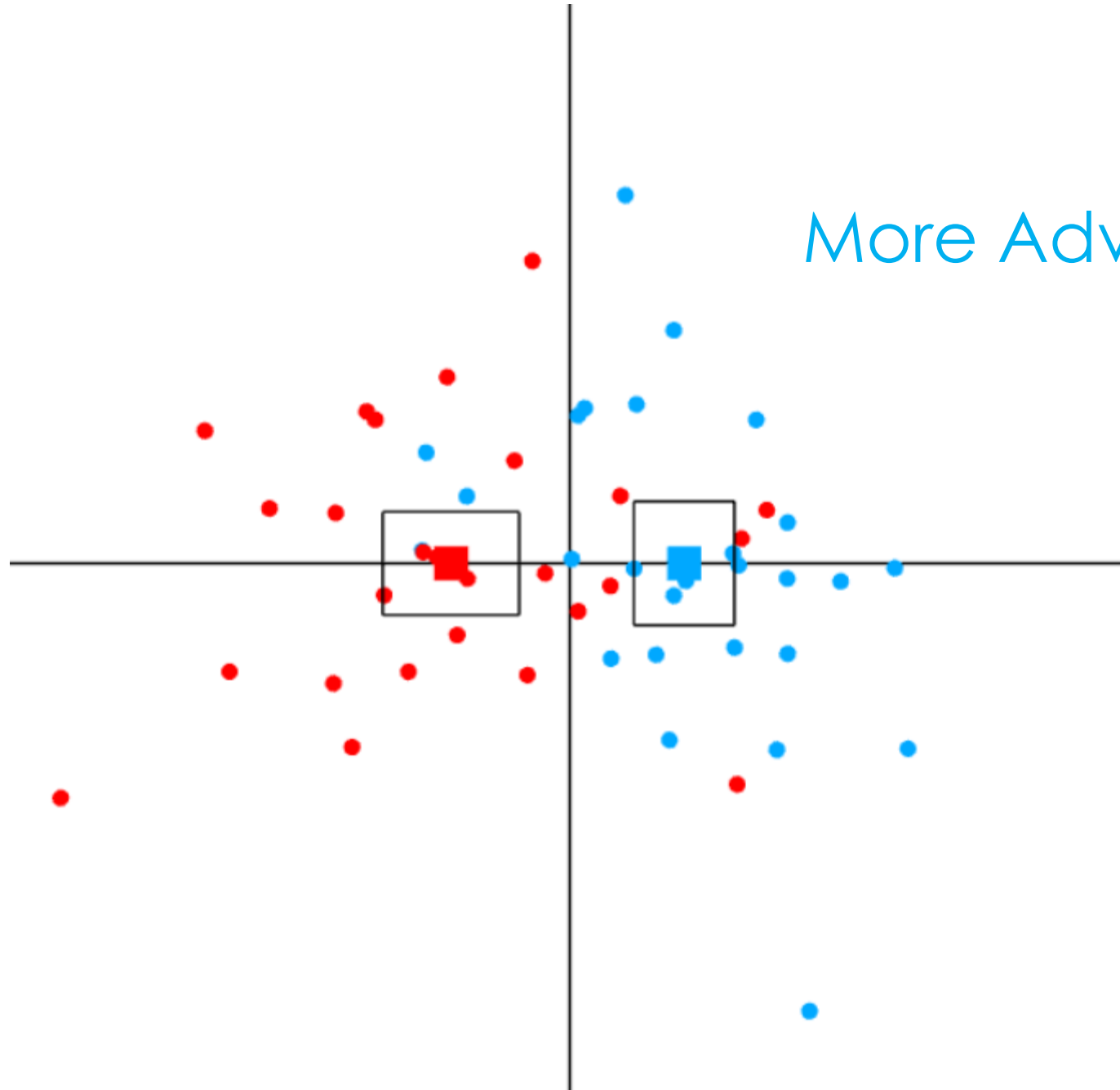
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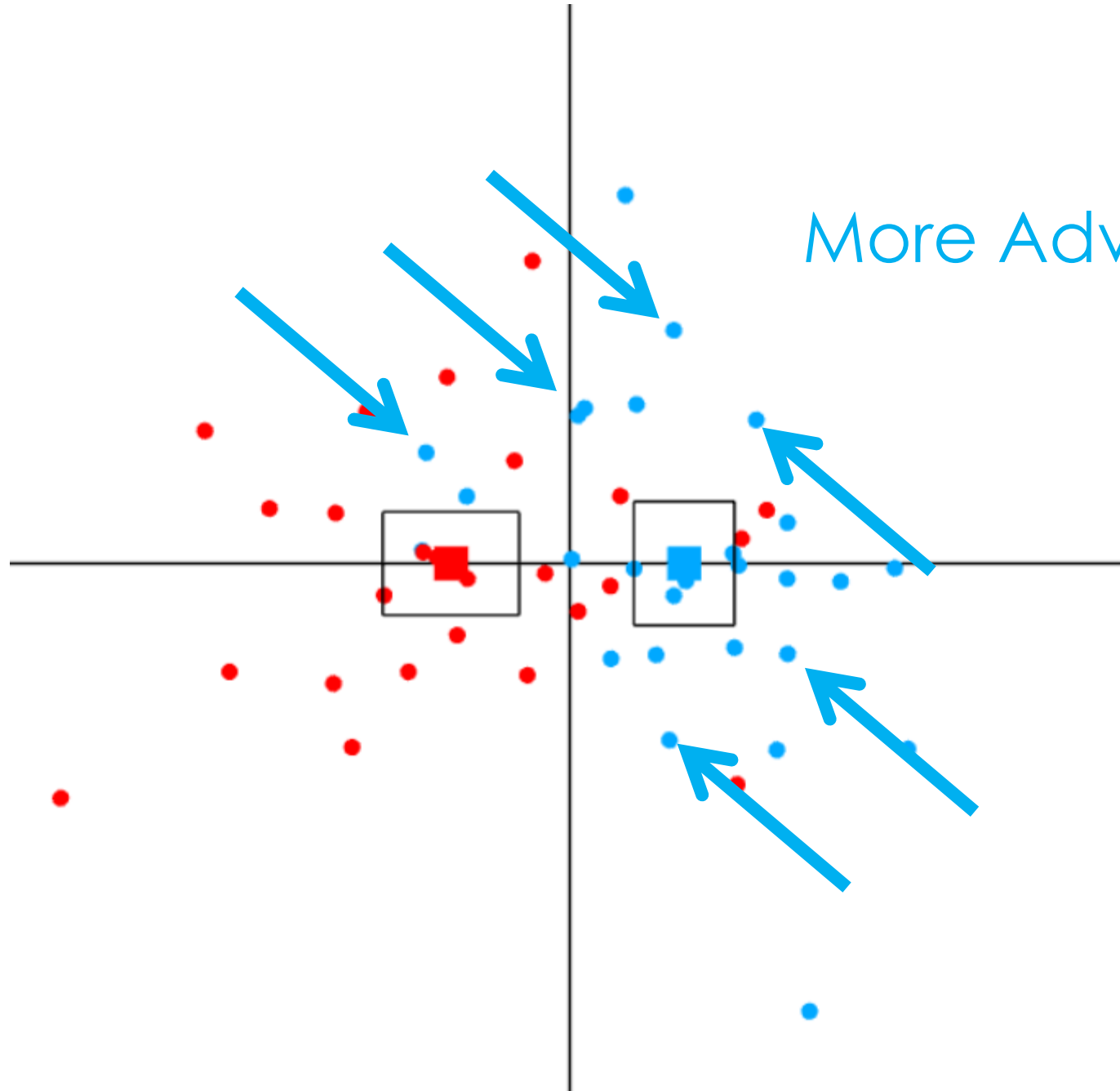
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More Advanced



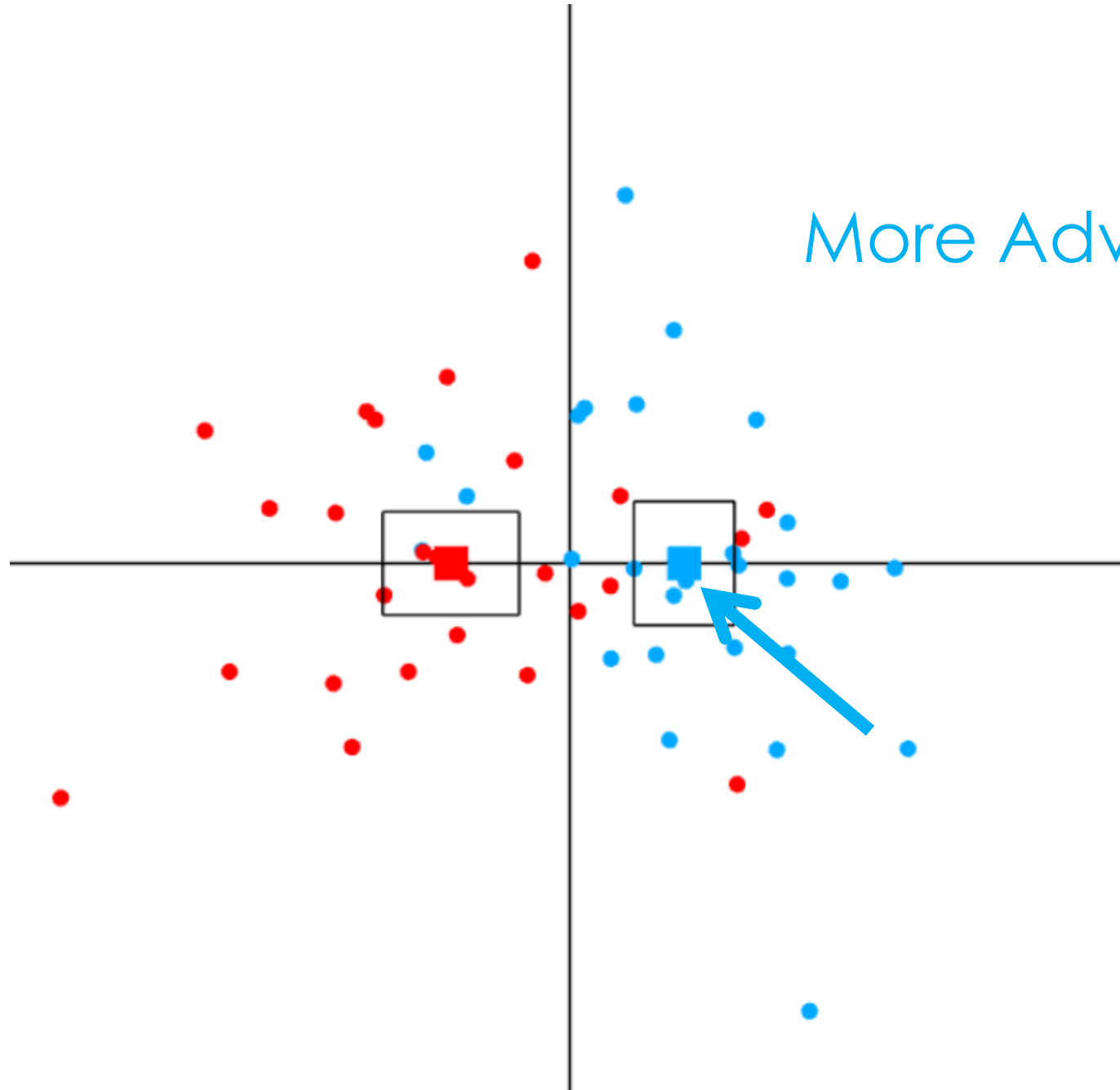
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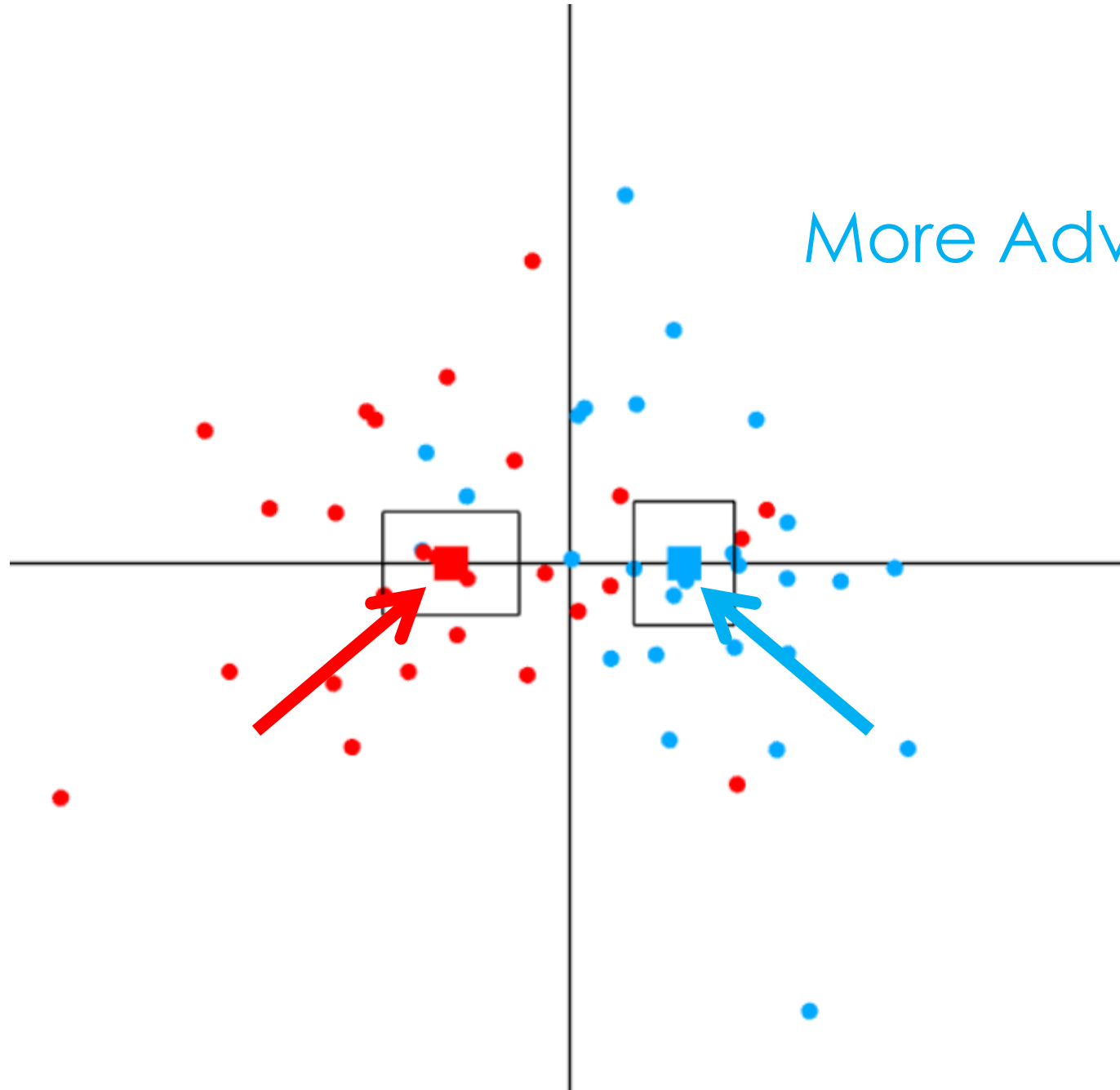
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More Advanced



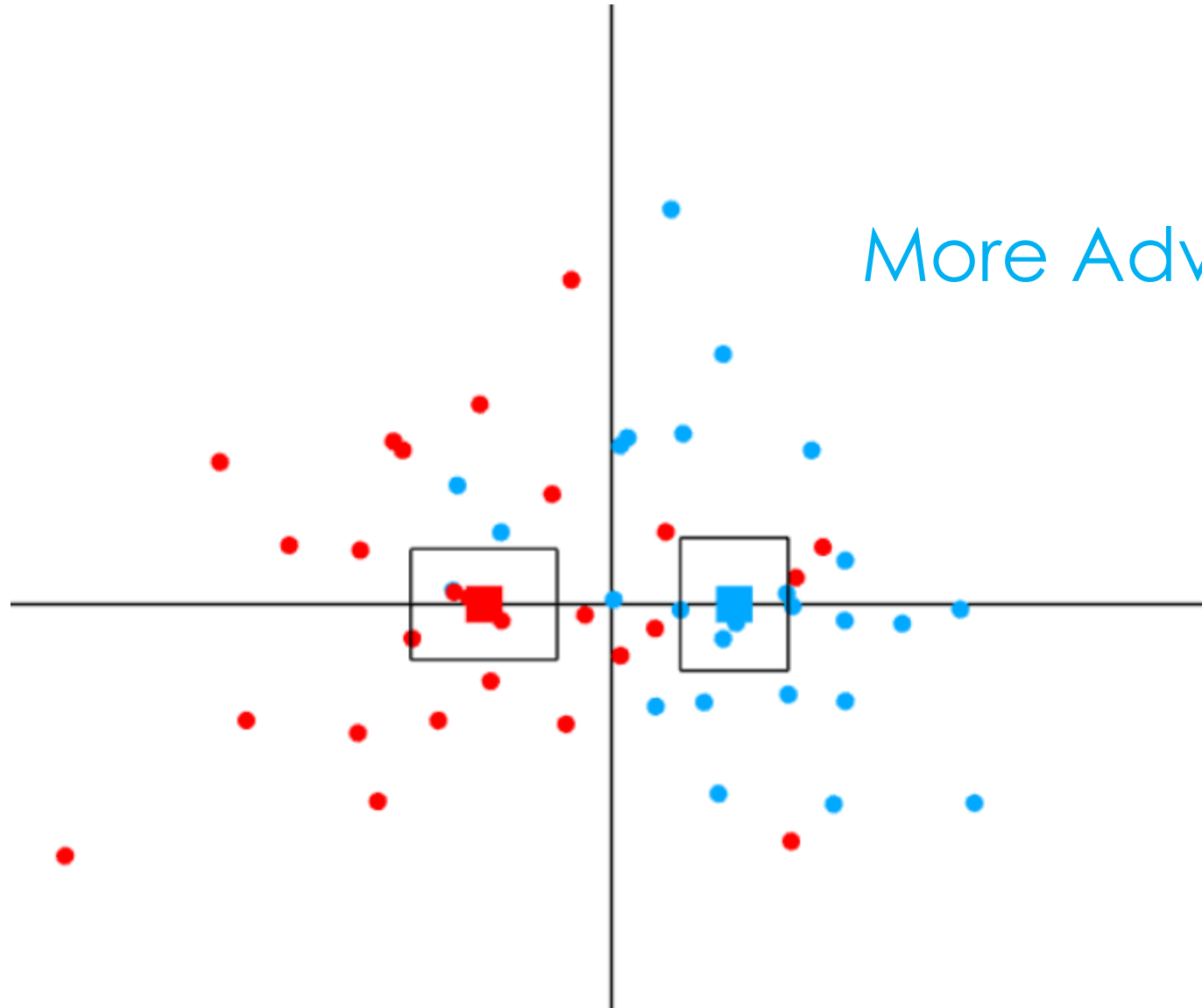
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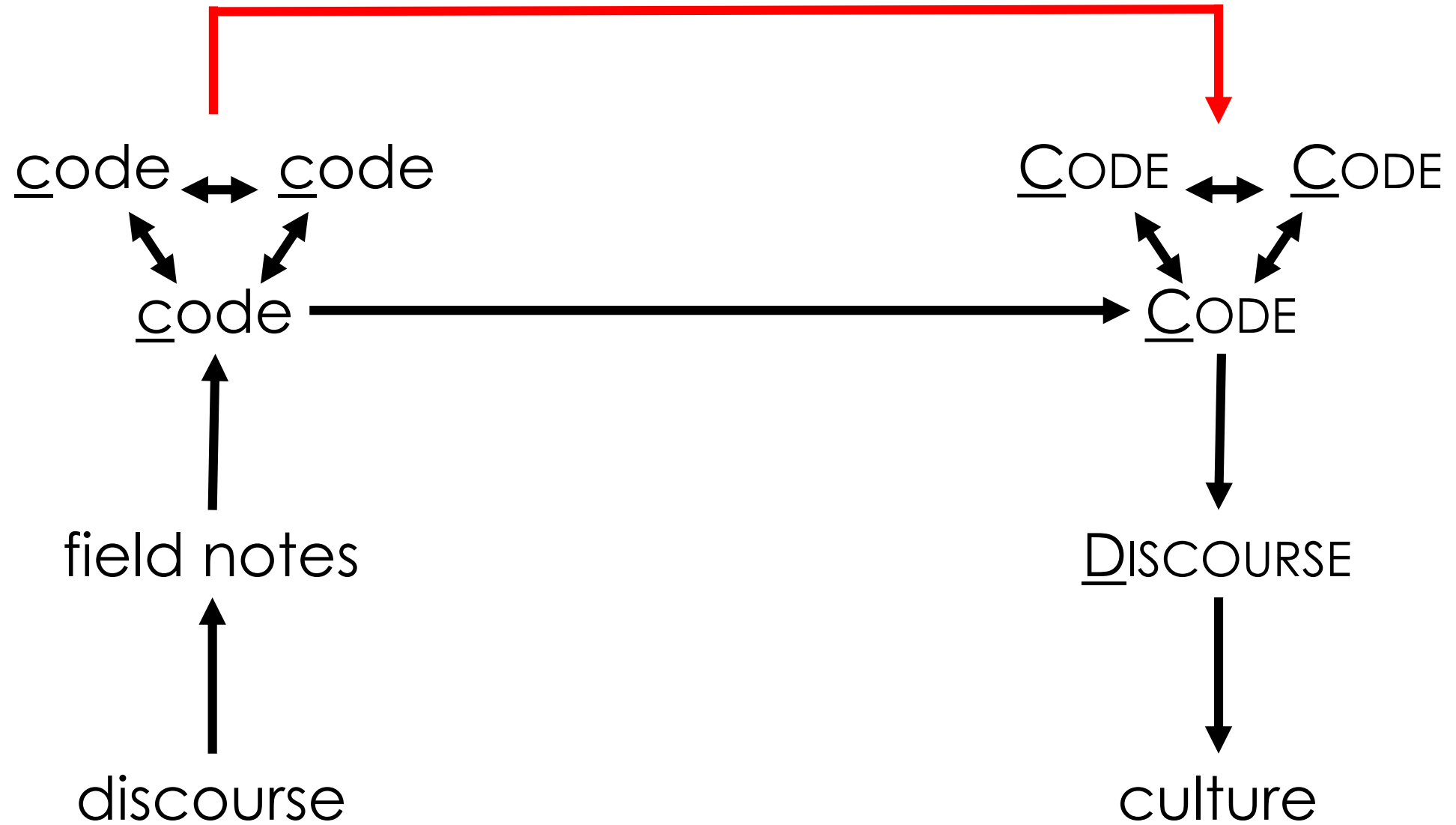


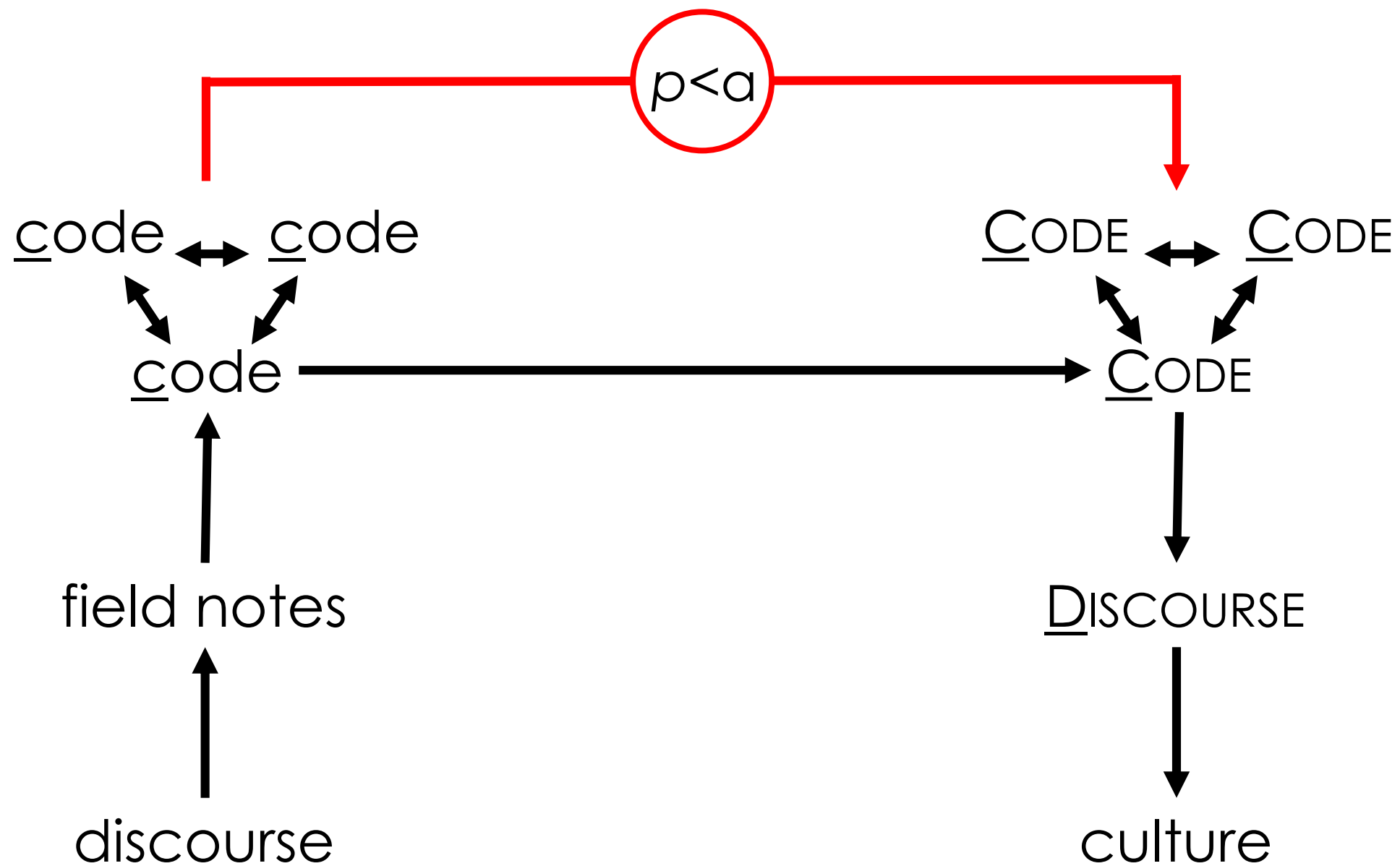
Novices

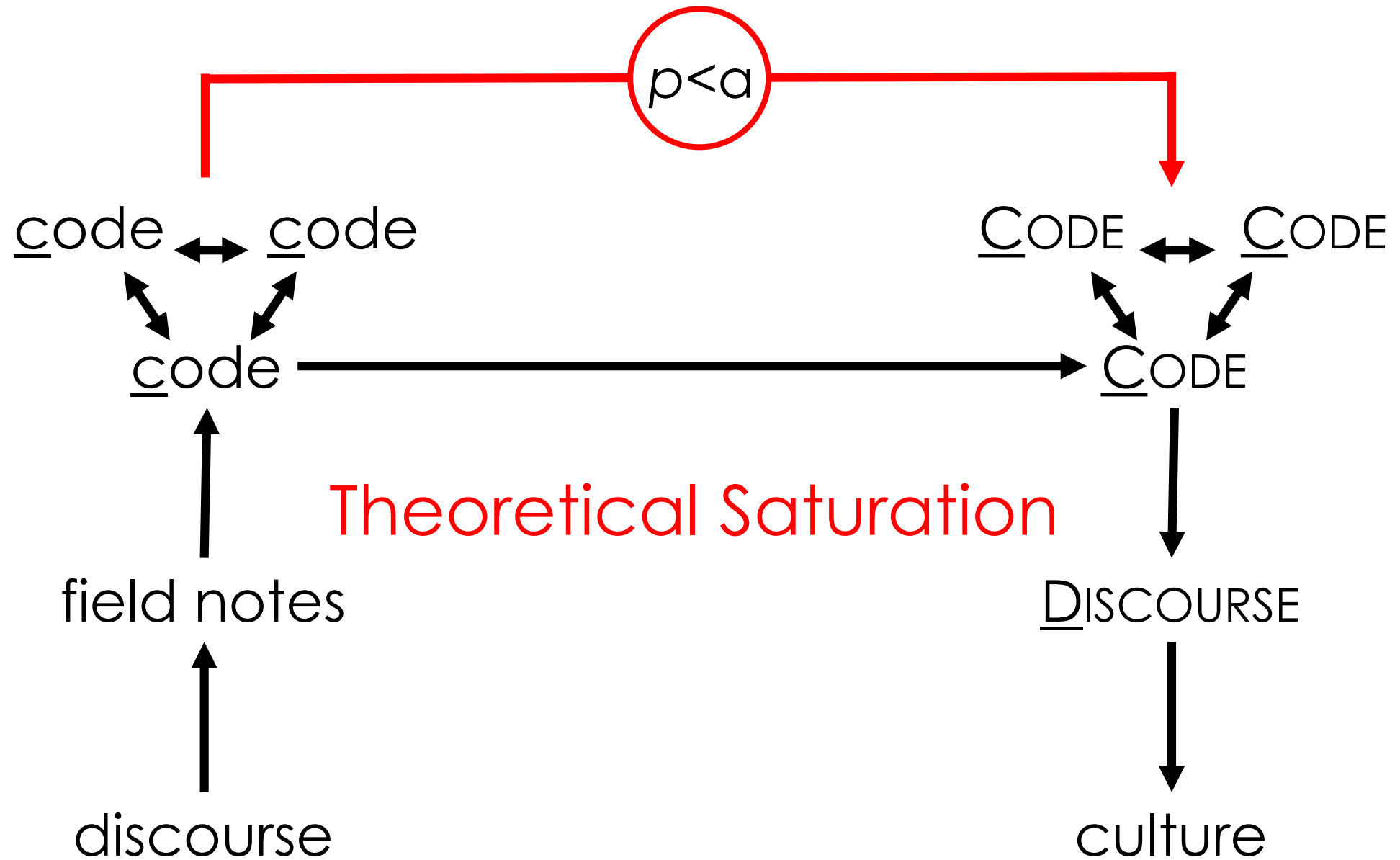
More Advanced



$N = 50, p < 0.001, r^2 = 39\%$







Novices

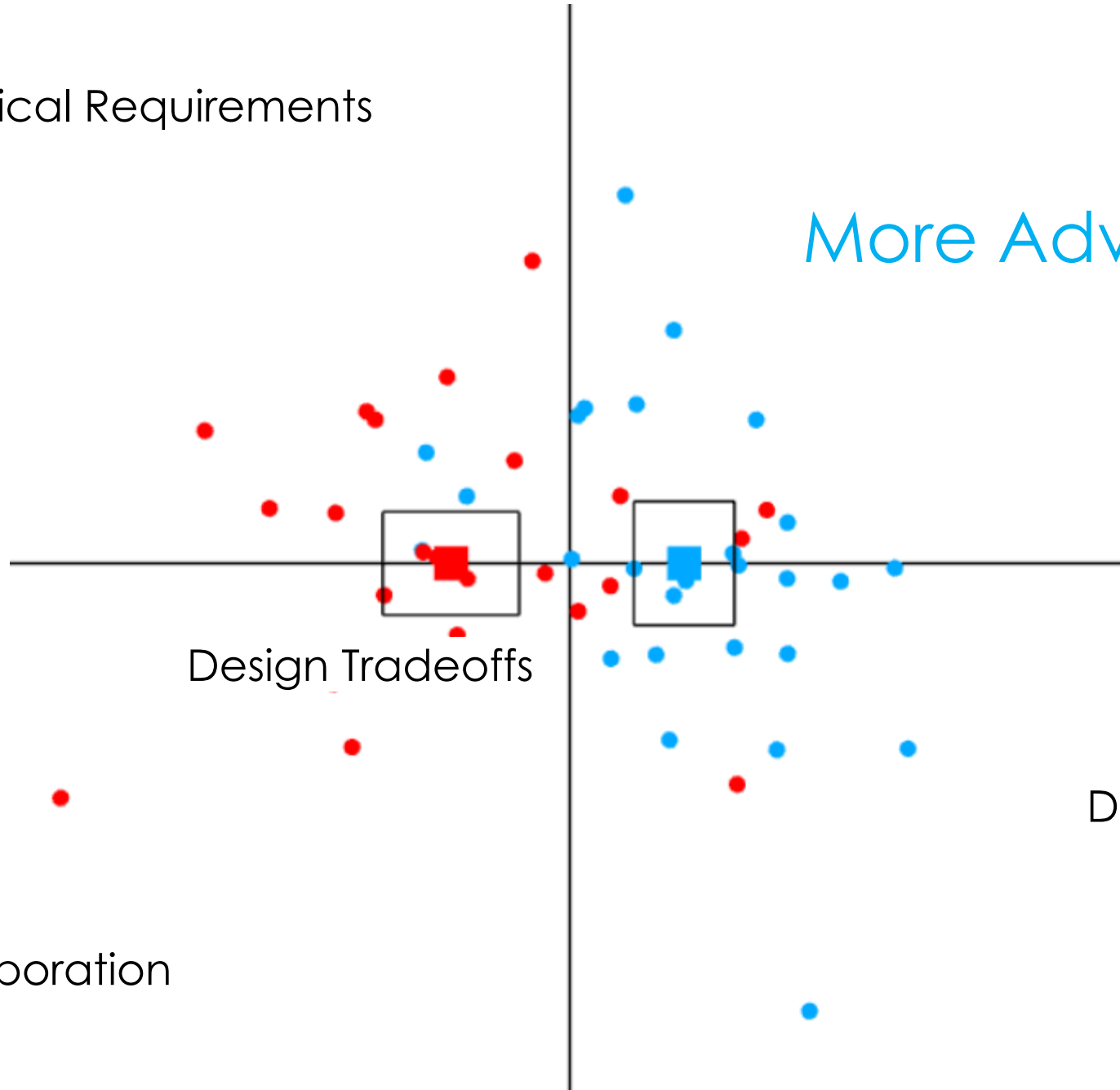
More Advanced

Technical Requirements

Design Tradeoffs

Data

Collaboration



Novices

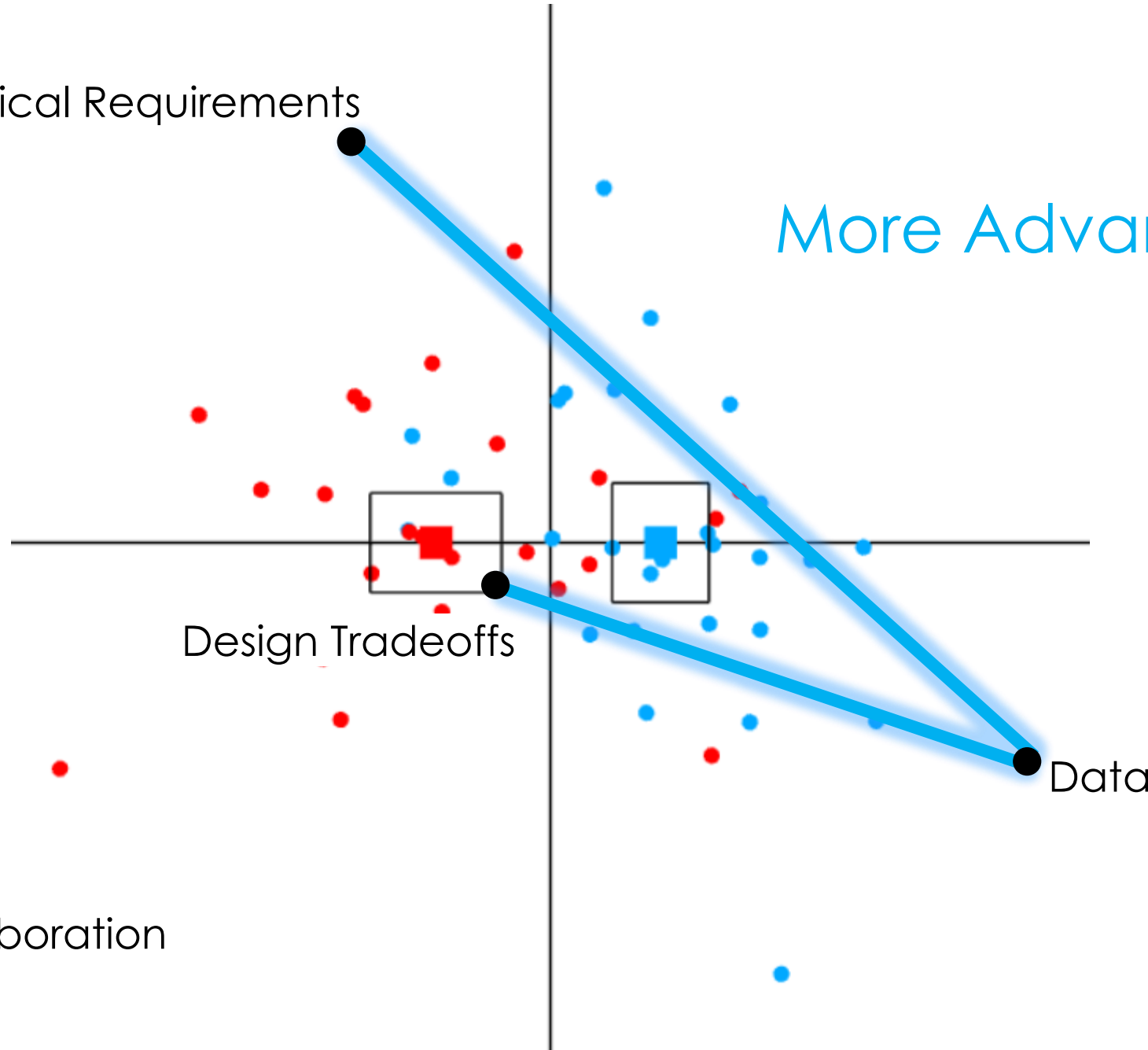
Technical Requirements

More Advanced

Design Tradeoffs

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Collaboration



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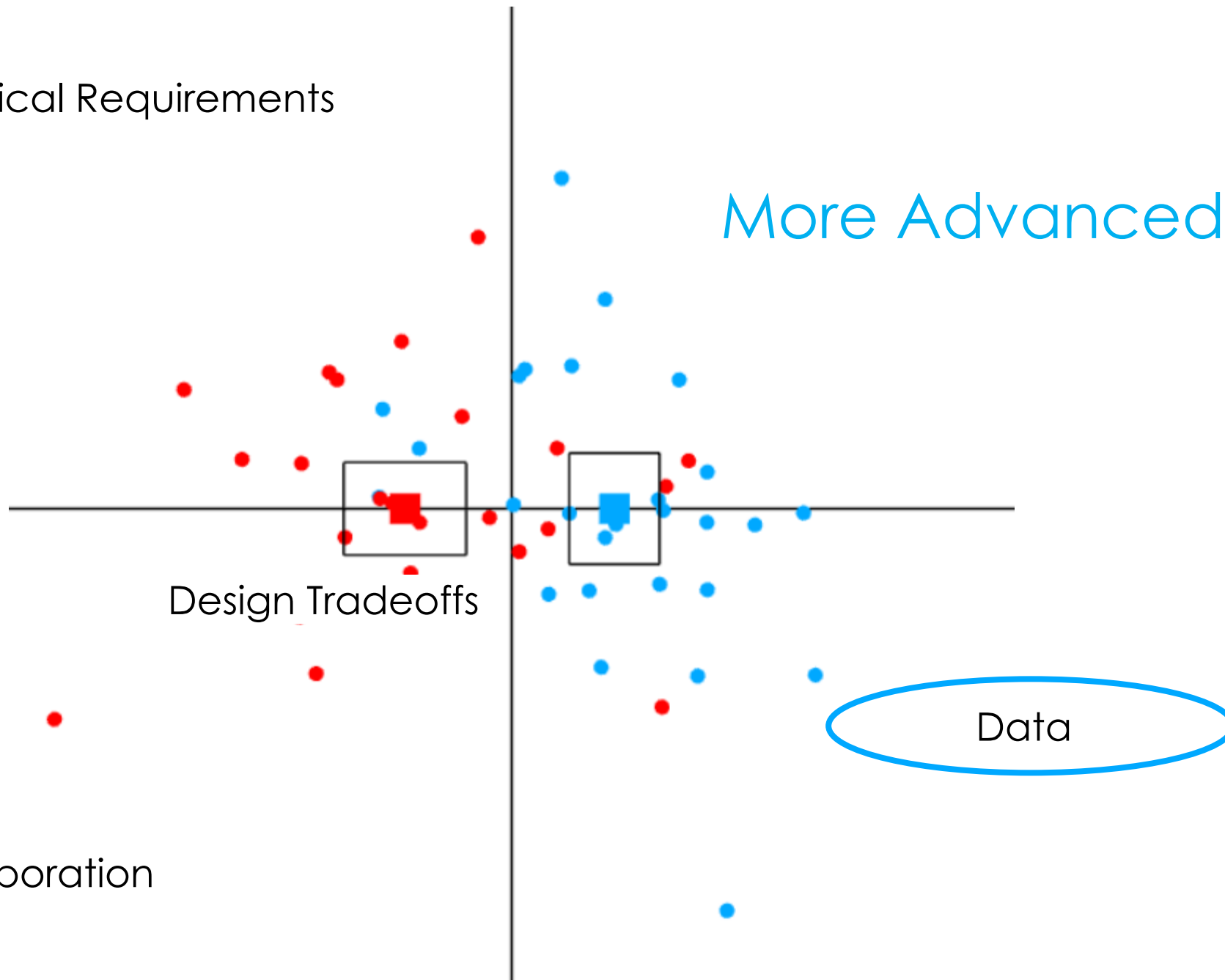
Technical Requirements

More Advanced

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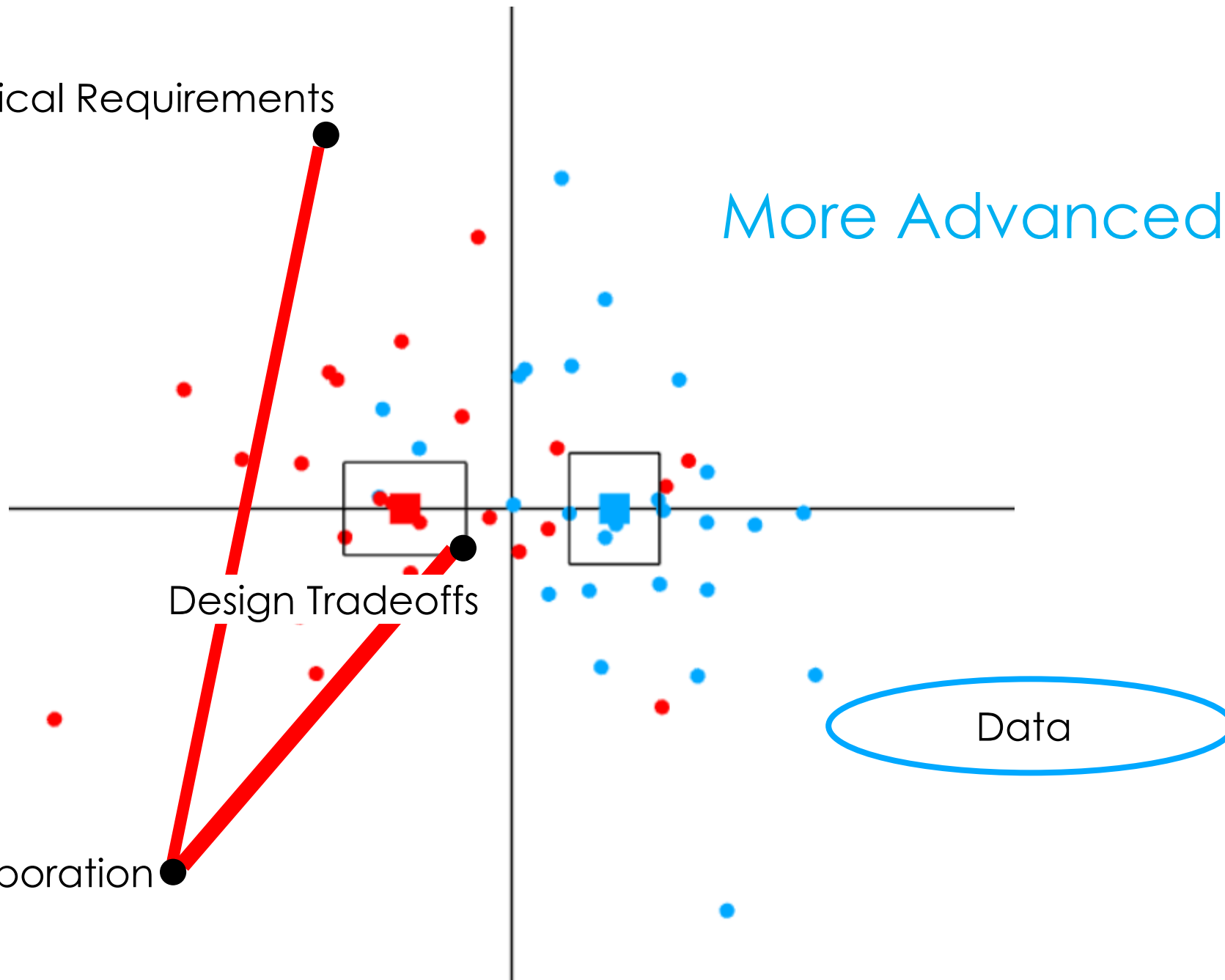
Technical Requirements

More Advanced

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Technical Requirements

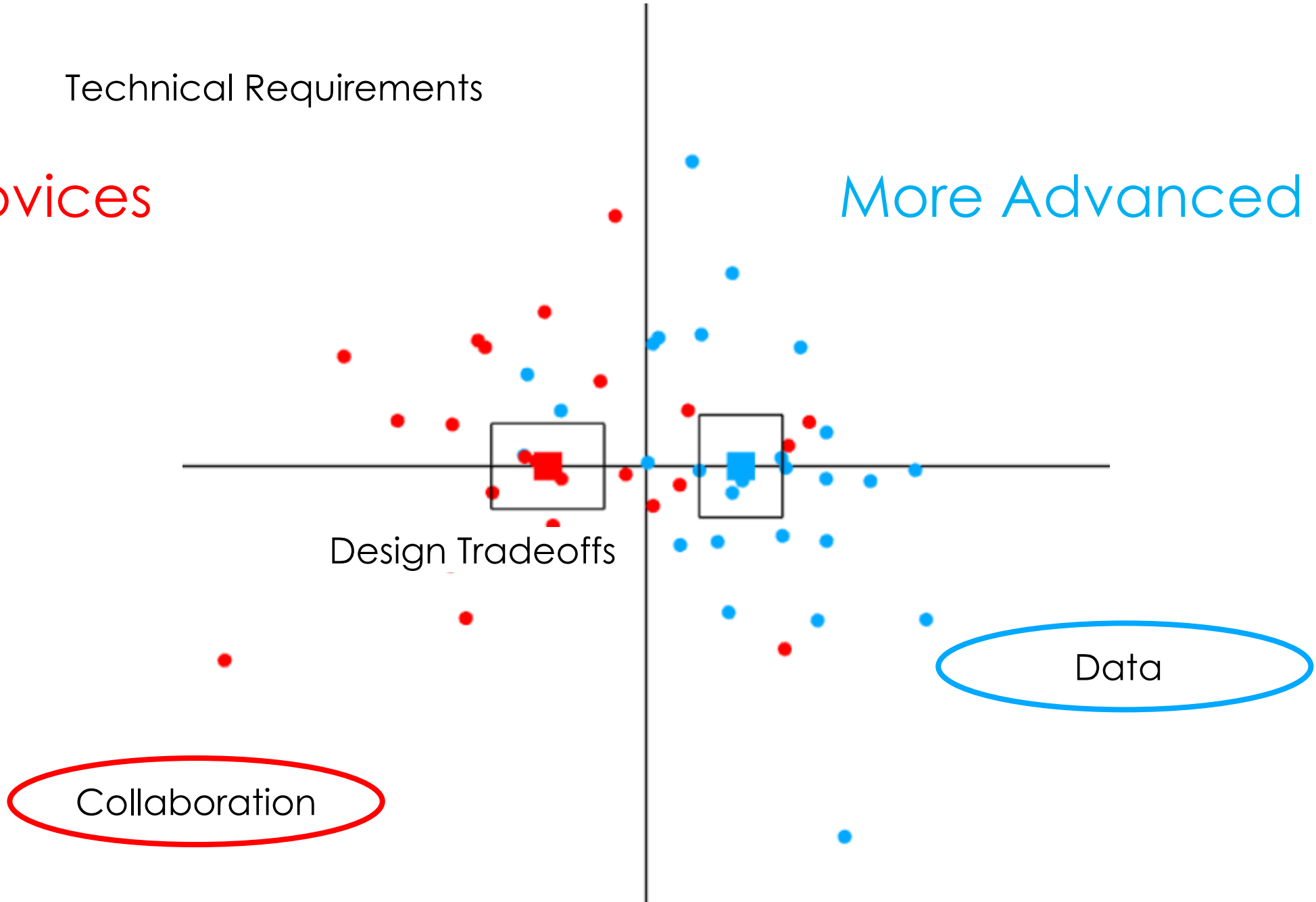
Novices

More Advanced

Design Tradeoffs

Data

Collaboration



Could you format your data this way?

RSdata2.xlsx - Excel

FileHomeInsertPage LayoutFormulasDataReviewViewACROBAT

Tell me what you want to do...

Sign inShare

M38

X✓fx

Hi Justin

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
1	UserName	Condition	COF	COF	COF	C.Level.Pr	C.Change	Timestamp	Activity	GroupNam	GameHalf	Game text	E.data	S.data	E.design	S.design	S.professic	E.client	V.client	E.consulta	V.
2	akash v	FirstGame	6	8	2	High.Pre	Pos.Chang	9/17/2013	1	Electric	First	1 Hey, I am Akash	0	0	0	0	0	0	0	0	0
3	alexander	FirstGame	5	7	1	Low.Pre	Pos.Chang	9/17/2013	1	Electric	First	1 I'm Alex	0	0	0	0	0	0	0	0	0
4	amelia n	FirstGame	5	7	1	Low.Pre	Pos.Chang	9/17/2013	1	PAM	First	1 @Justin Kim: Hi my name is Amelia	0	0	0	0	0	0	0	0	0
5	arden f	FirstGame	5	7	1	Low.Pre	Pos.Chang	9/17/2013	1	Hydraulic	First	1 Greetings everyone! My name is Arden, and I am	0	0	0	0	0	0	0	0	0
6	brandon l	FirstGame	5	6	1	Low.Pre	Pos.Chang	9/17/2013	1	Electric	First	1 OK.	0	0	0	0	0	0	0	0	0
7	brandon l	FirstGame	5	6	1	Low.Pre	Pos.Chang	9/17/2013	1	Electric	First	1 OK.	0	0	0	0	0	0	0	0	0
8	cameron k	FirstGame	6	7	1	High.Pre	Pos.Chang	9/17/2013	1	Series Elas	First	1 Hi everyone, I'm Cameron, nice to meet you	0	0	0	0	0	0	0	0	0
9	cameron k	FirstGame	6	7	1	High.Pre	Pos.Chang	9/17/2013	1	Series Elas	First	1 Hi Nassim, I can't seem to figure out what to do/I	0	0	0	0	0	0	0	0	0
10	cameron k	FirstGame	6	7	1	High.Pre	Pos.Chang	9/17/2013	1	Series Elas	First	1 Hi everyone, I'm Cameron, nice to meet you	0	0	0	0	0	0	0	0	0
11	cameron k	FirstGame	6	7	1	High.Pre	Pos.Chang	9/17/2013	1	Series Elas	First	1 Hi Nassim, I can't seem to figure out what to do/I	0	0	0	0	0	0	0	0	0
12	connor f	FirstGame	6	6	0	High.Pre	Neg.Chang	9/17/2013	1	Hydraulic	First	1 Hello team, I'm Connor, looking forward to worki	0	0	0	0	0	0	0	0	0
13	devin c	FirstGame	7	7	0	High.Pre	Pos.Chang	9/17/2013	1	PAM	First	1 @Justin Kim: My name's Devin.	0	0	0	0	0	0	0	0	0
14	devin c	FirstGame	7	7	0	High.Pre	Pos.Chang	9/17/2013	1	PAM	First	1 @Justin Kim: I am simply testing this chat feature	0	0	0	0	1	0	0	0	0
15	jimmy i	FirstGame	5	8	2	Low.Pre	Pos.Chang	9/17/2013	1	Hydraulic	First	1 @Nassim Tehrani: Hi team, I am okay with Jimmy	0	0	0	0	0	0	0	0	0
16	jordan l	FirstGame	6	8	2	High.Pre	Pos.Chang	9/17/2013	1	Hydraulic	First	1 Okay, thanks!	0	0	0	0	0	0	0	0	0
17	jordan l	FirstGame	6	8	2	High.Pre	Pos.Chang	9/17/2013	1	Hydraulic	First	1 Hello! I am Jordan. I am excited to make real en	0	0	0	1	0	0	0	0	0
18	joseph l	FirstGame	6	8	2	High.Pre	Pos.Chang	9/17/2013	1	Series Elas	First	1 Hello everyone, I am Joe. Nice to meet all of you	0	0	0	0	0	0	0	0	0
19	joseph l	FirstGame	6	8	2	High.Pre	Pos.Chang	9/17/2013	1	Pneumatic	First	1 Interview submitted at 10:27 on September 17th	0	1	0	0	0	0	0	0	0
20	margaret r	FirstGame	4	7	3	Low.Pre	Pos.Chang	9/17/2013	1	Hydraulic	First	1 @Nassim Tehrani: Hi, team. You can call me Mag	0	0	0	0	0	0	0	0	0
21	peter p	FirstGame	4	4	1	Low.Pre	Pos.Chang	9/17/2013	1	Series Elas	First	1 Hello Nassim, I am Peter. Nice to work with you	0	0	0	0	1	0	0	0	0
22	robert z	FirstGame	7	8	1	High.Pre	Pos.Chang	9/17/2013	1	Pneumatic	First	1 Hey guys, I'm Robert. Can't wait to see what we	0	0	0	0	0	0	0	0	0
23	robert z	FirstGame	7	8	1	High.Pre	Pos.Chang	9/17/2013	1	Pneumatic	First	1 Nassim, is there anything else we need to do right	0	0	0	0	0	0	0	0	0
24	robert z	FirstGame	7	8	1	High.Pre	Pos.Chang	9/17/2013	1	Pneumatic	First	1 @Nassim Tehrani: Thank you!	0	0	0	0	0	0	0	0	0
25	steven z	FirstGame	7	8	1	High.Pre	Pos.Chang	9/17/2013	1	Electric	First	1 Steven	0	0	0	0	0	0	0	0	0
26	tiffany x	FirstGame	6	7	1	High.Pre	Pos.Chang	9/17/2013	1	PAM	First	1 @Justin Kim: I'm Tiffany.	0	0	0	0	0	0	0	0	0
27	abigail z	SecondGai	##	##	##	#N/A	#N/A	#####	1	Series Elas	First	1 Should I submit the interview without it?	0	0	0	0	0	0	0	0	0
28	abigail z	SecondGai	##	##	##	#N/A	#N/A	#####	1	Series Elas	First	1 I could see that one, it	0	0	0	0	0	0	0	0	0
29	abigail z	SecondGai	##	##	##	#N/A	#N/A	#####	1	Series Elas	First	1 's the bubble chart thing	0	0	0	0	0	0	0	0	0
30	abigail z	SecondGai	##	##	##	#N/A	#N/A	#####	1	Series Elas	First	1 Sounds good, thank you!	0	0	0	0	0	0	0	0	0
31	abigail z	SecondGai	##	##	##	#N/A	#N/A	#####	1	Series Elas	First	1 It lets me move on, but the bubbles are still not th	0	0	0	0	0	0	0	0	0
32	abigail z	SecondGai	##	##	##	#N/A	#N/A	#####	1	Series Elas	First	1 My interview won't let me see one of the charts c	0	0	0	0	0	0	0	0	0
33	abigail z	SecondGai	##	##	##	#N/A	#N/A	#####	1	Series Elas	First	1 Hi, I'm Abby	0	0	0	0	0	0	0	0	0
34	brandon f	SecondGai	5	6	1	Low.Pre	Pos.Chang	#####	1	Hydraulic	First	1 Hi Justin	0	0	0	0	0	0	0	0	0
35	brandon f	SecondGai	5	6	1	Low.Pre	Pos.Chang	#####	1	Hydraulic	First	1 Hi, I'm Brandon	0	0	0	0	0	0	0	0	0
36	brandon f	SecondGai	5	6	1	Low.Pre	Pos.Chang	#####	1	Hydraulic	First	1 Is anyone else having trouble viewing the three ty	0	0	0	0	0	0	0	0	0

RSdata2

Ready

MODEL

Units

Conversation

Codes

Condition Username

FirstGame

SecondGame

COMPARISON PLOT

FirstGame - SecondGame

Y-Axis

X-Axis

Units: Condition > Username
Conversation: Condition

MAIN PLOT

SECONDARY PLOT

Advanced Options

Data View

History

MODEL

Units

Conversation

Codes

Condition UserName +

FirstGame

SecondGame

COMPARISON PLOT

FirstGame - SecondGame

Y-Axis

X-Axis

rENA

Units: Condition > UserName
Conversation: Condition

MAIN PLOT

SECONDARY PLOT

Advanced Options

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History

Novices

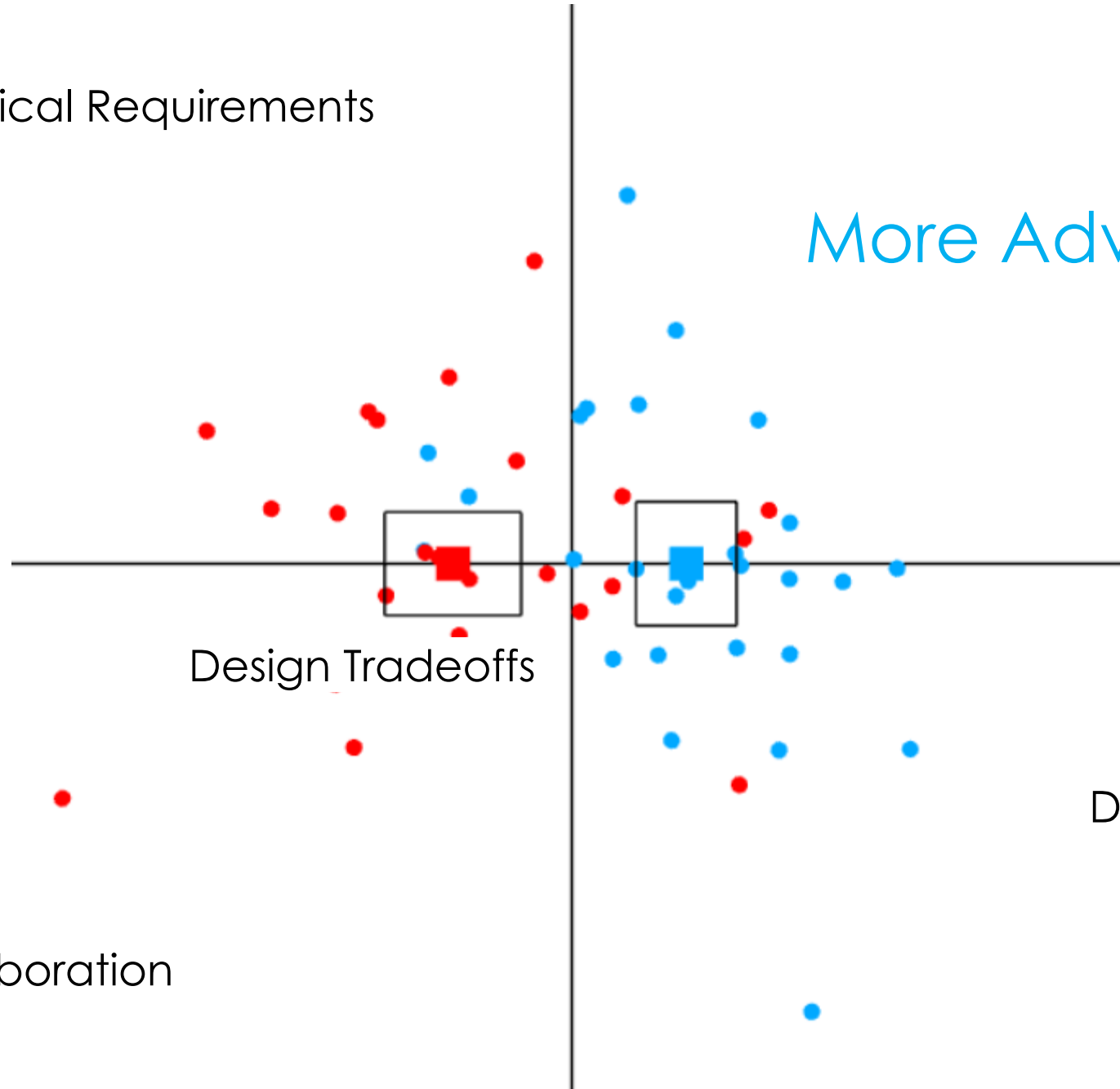
More Advanced

Technical Requirements

Design Tradeoffs

Data

Collaboration



Novices

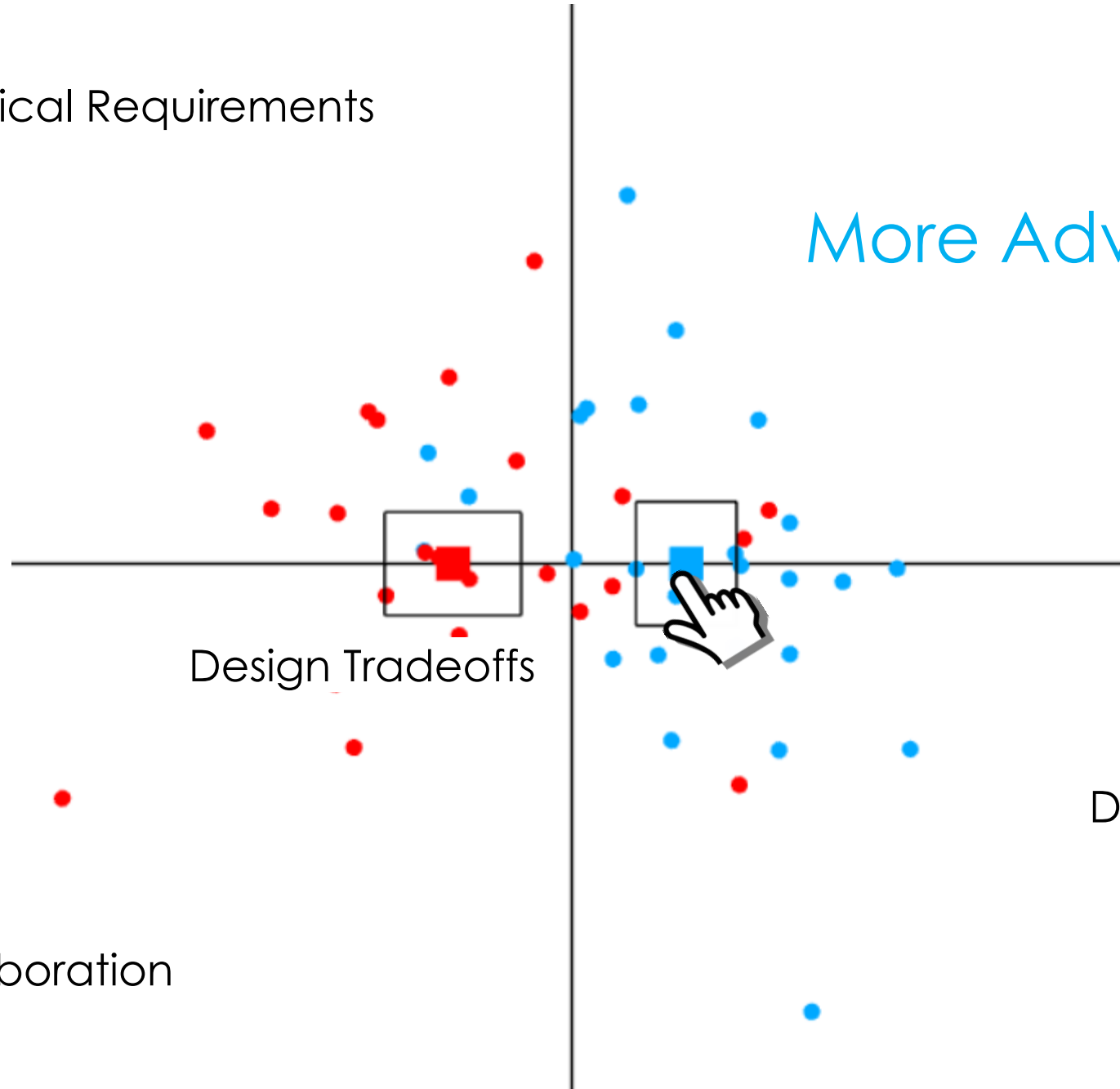
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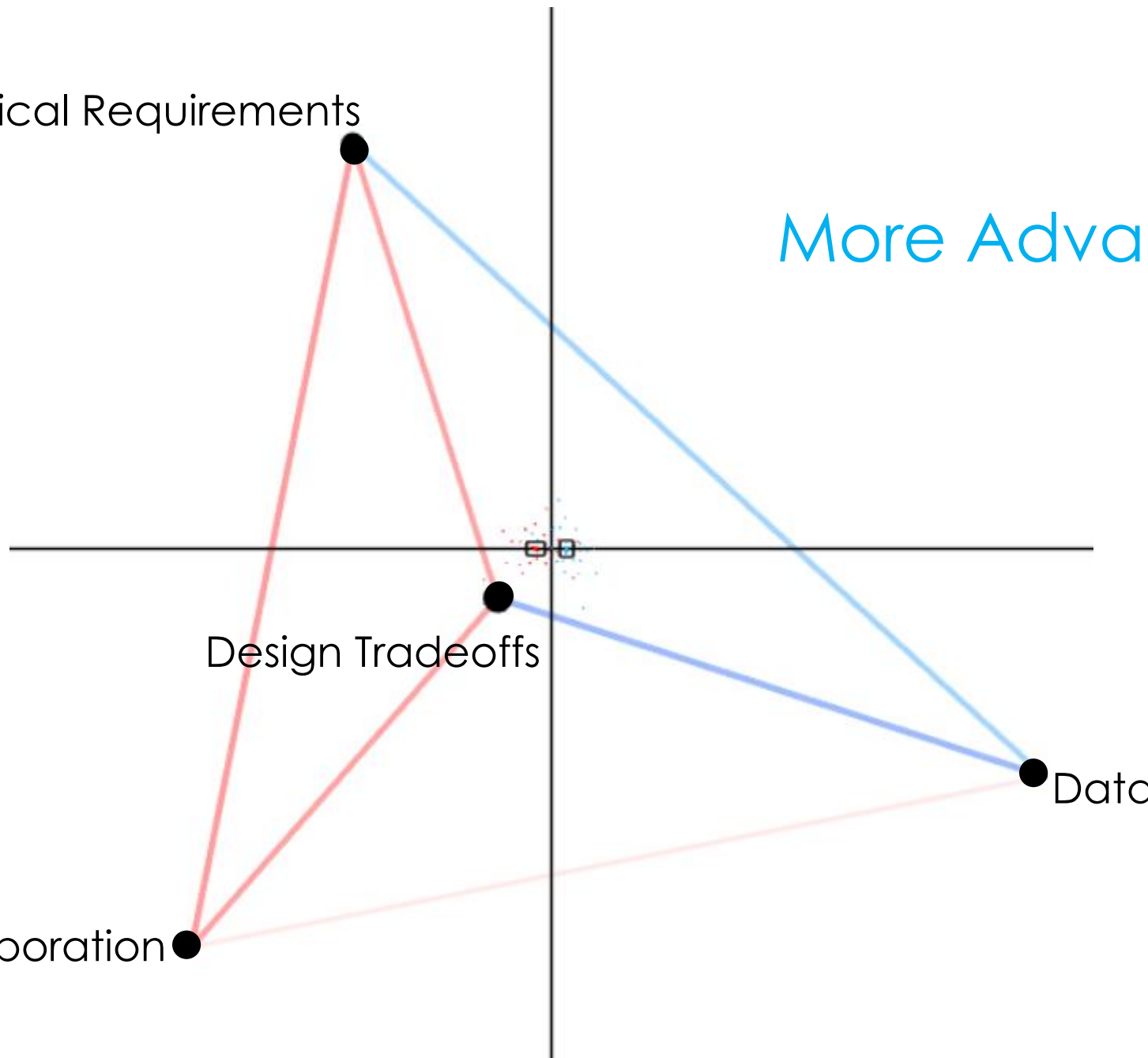
More Advanced

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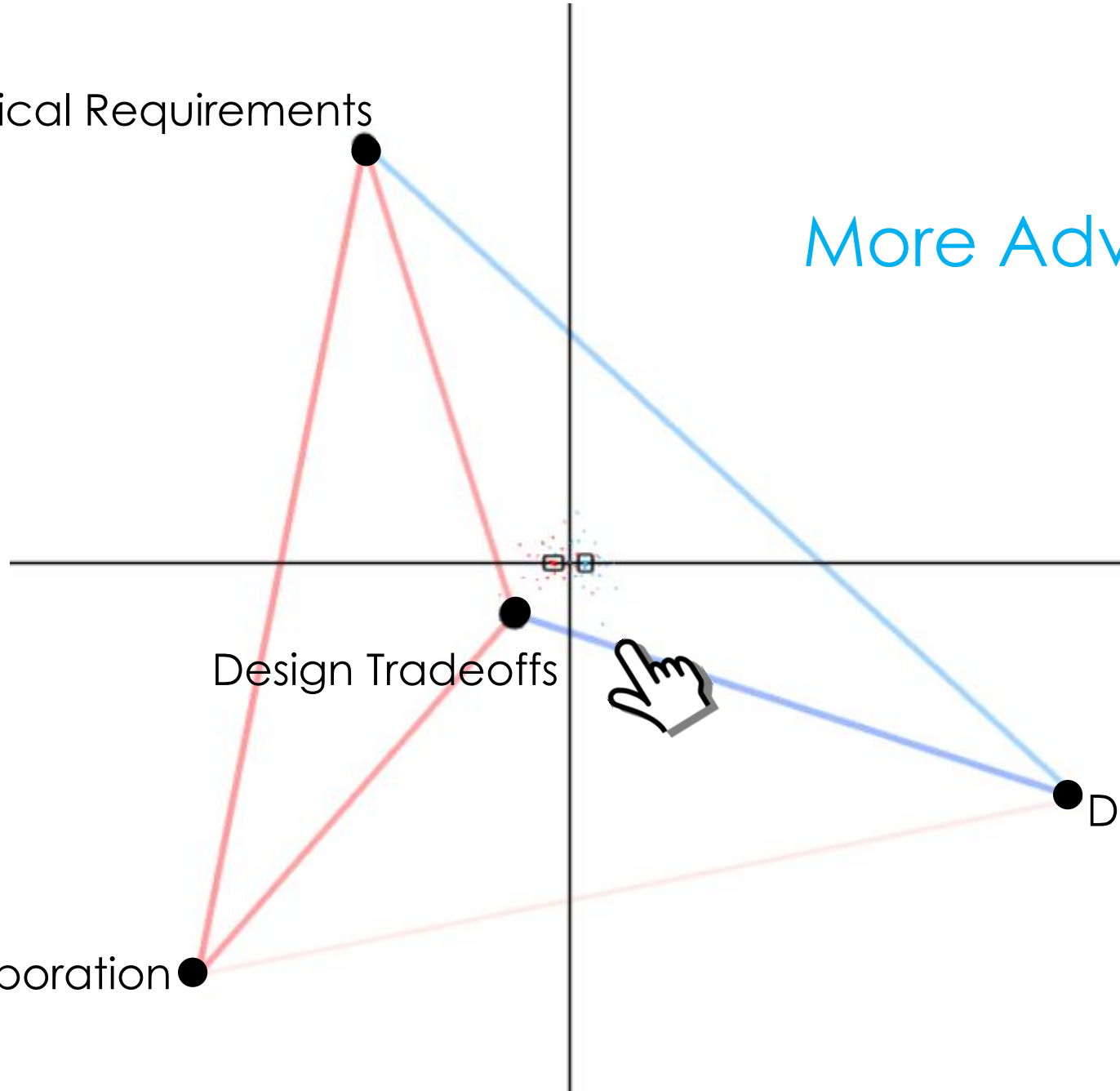
More Advanced

Technical Requirements

Design Tradeoffs

Collaboration

Data



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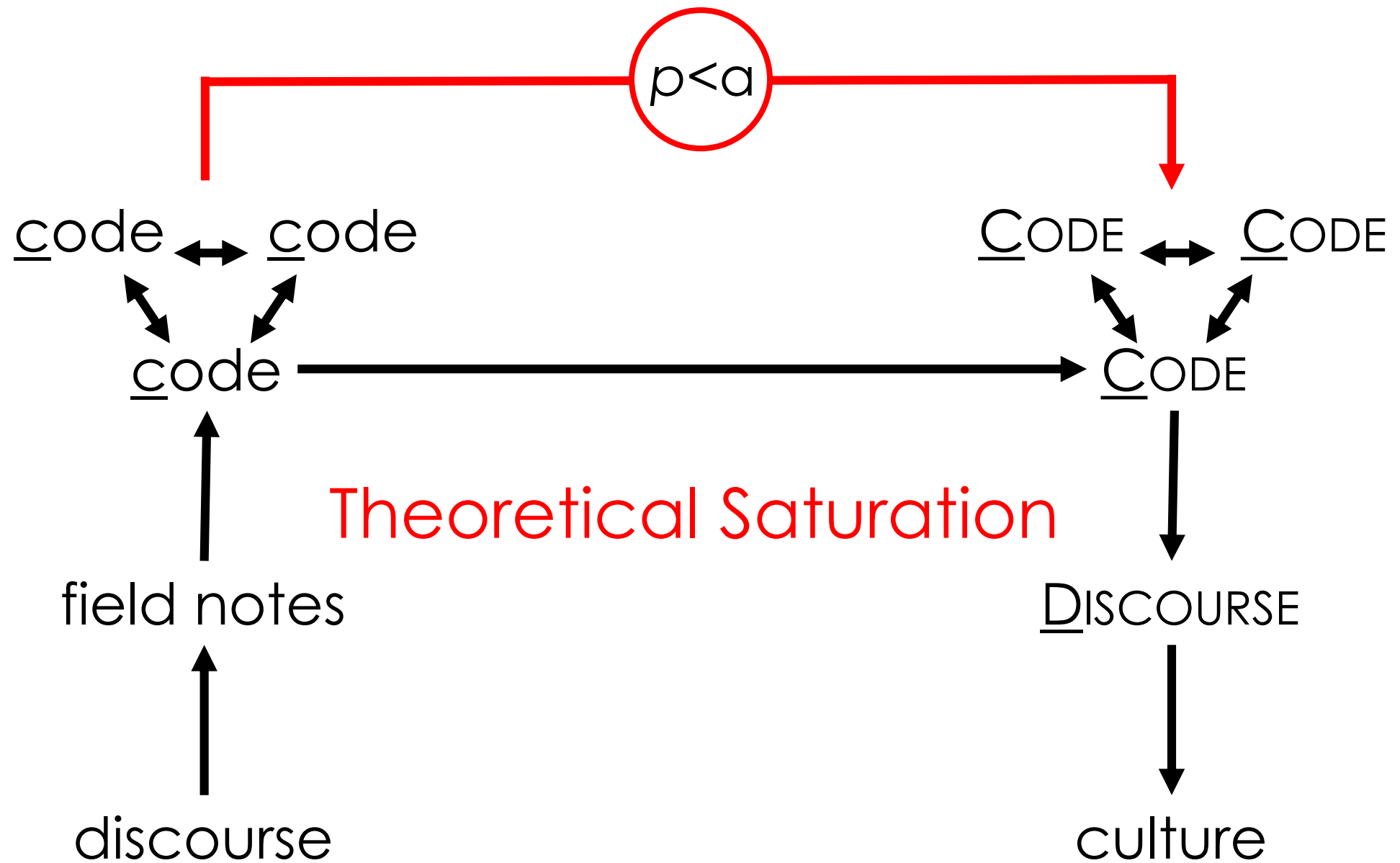
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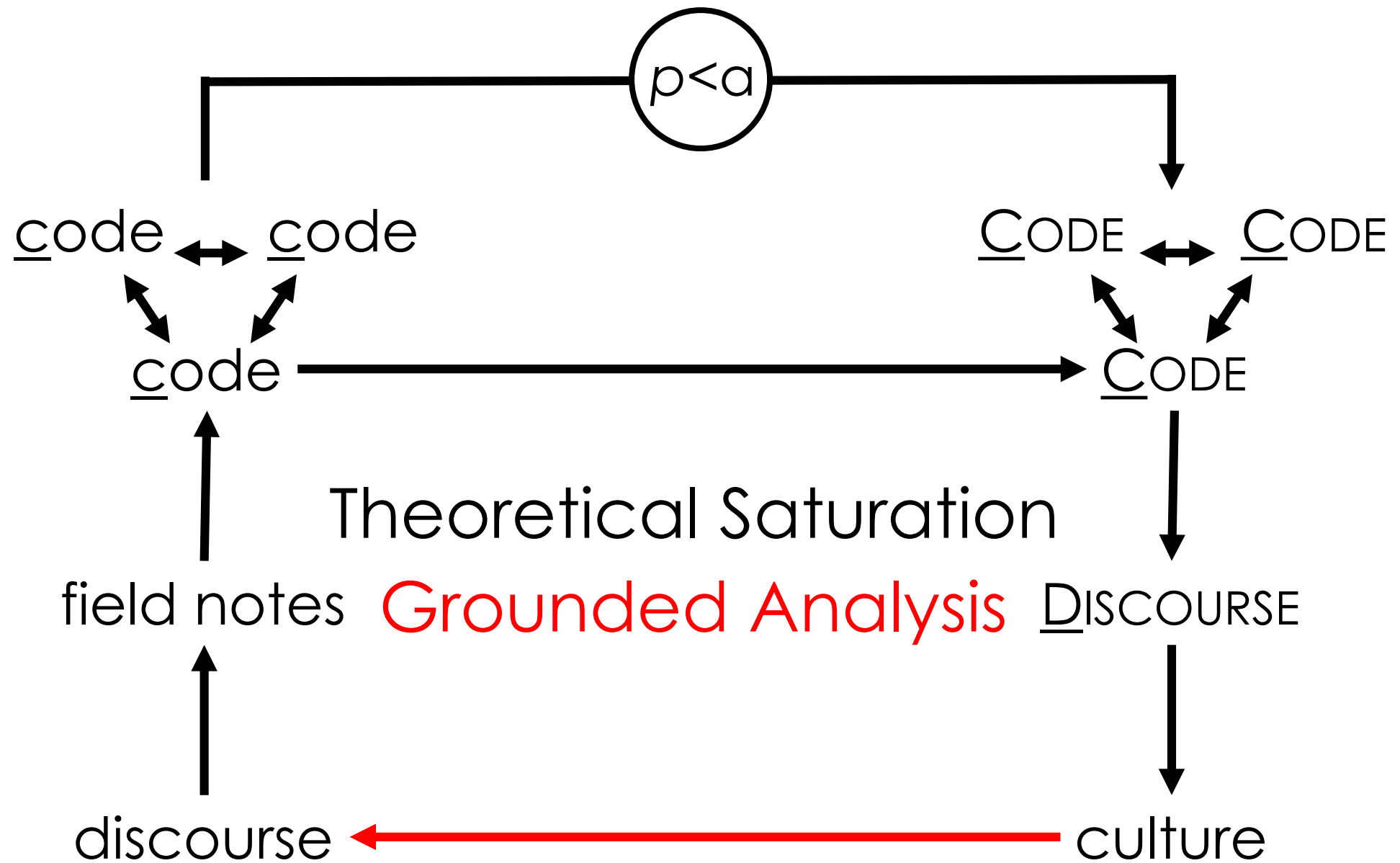
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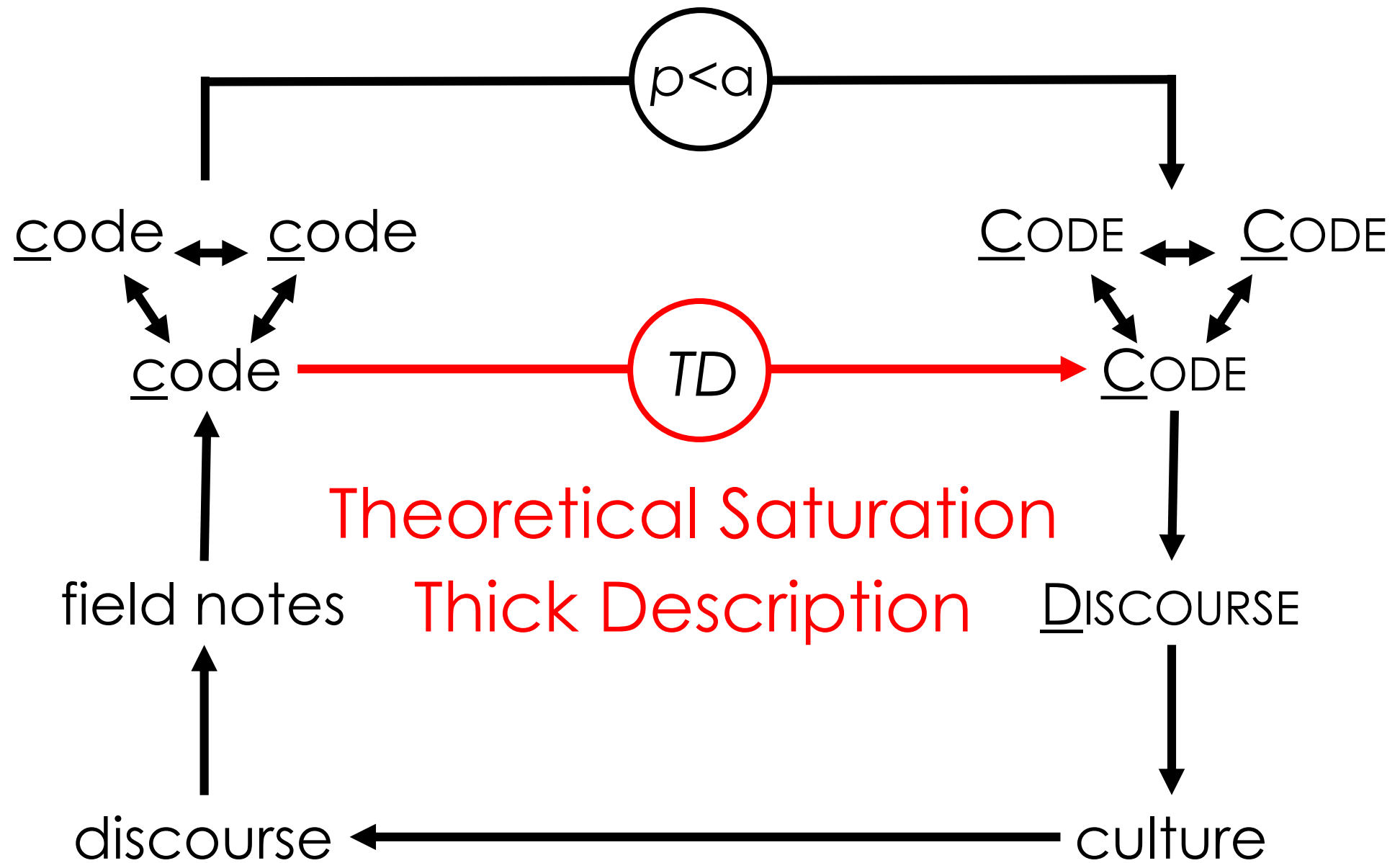
1

Conversation: Condition = SecondGame, GroupName = 4

...			
● the recharge interval ranged from 5.98-6.90	madeline g	0	1
● Most of my prototypes were only able to satisfy 1-3 consultants, did anyone have more?	shane t	1	0
● ...			0
● Sounds good to me!			1
● does anyone have any results that satisfy all three of those?			1
●			1
●			0
●			0
● My device has a pretty good safety, payload, agility, and recharge interval; the cost is a little high though			1
●			0
● same here. I have one that has good scores for the categories, but is set at 15440 dollars			1
● <u>What's everyone's range for safety cause I feel mine is very high 191-229</u>			0
●			0
●			0
● Okay so should we choose either mine/Shane's prototypes, which are good in all categories except cost, or try to find another prototype that does not have such a high cost?	madeline g	1	1
● <u>We should choose our 3 best prototypes and then try to improve 2 of them by changing something</u>	christina b	1	0
●			
● because the agility, recharge interval and safety are good.	abigail z	0	1
● They gave us reference points to base our opinions on	abigail z	0	0
● Which prototype are you guys thinking?	shane t	1	0
● ya i was thinking either that one or Team 4 prototype, but the safety is the only issue with that one is safety	shane t	1	1
● I liked the group 2 #2 but the safety is too high so the batch 2 design 3 would be overall best	christina b	1	1







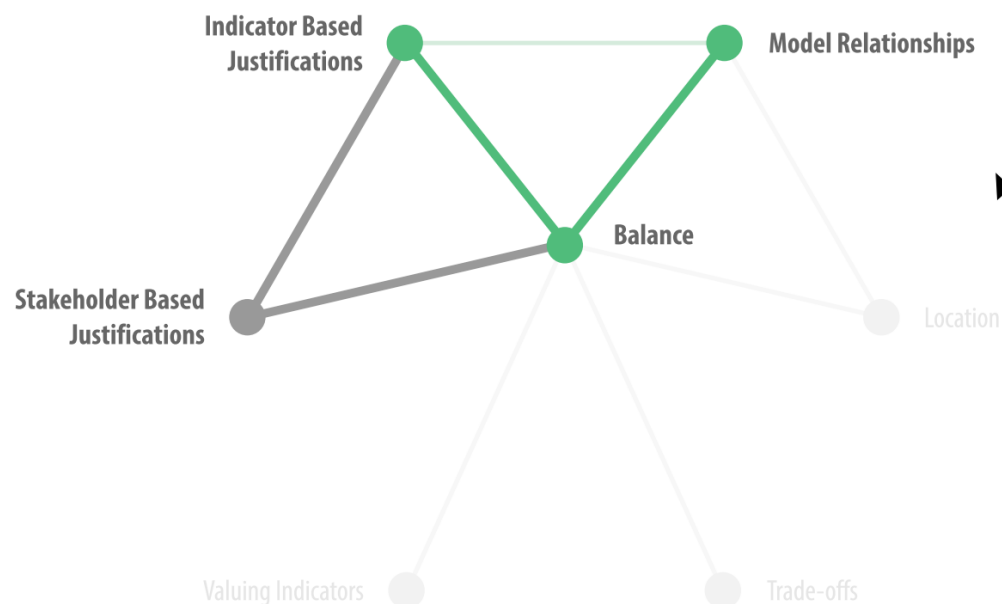
Individual ☒ Group

Close



Justine

Made at least one critical connection



Intervention

Justine is:

- balancing issues stakeholders care about

You might suggest that Justin thinks about:

- how land use changes affect indicators in the model, and how that can help balance issues stakeholders care about

Chat

know now to balance that out.

Bel: 6/29/16 02:45 PM

as we change things the indicator graphs would change things, like more commercial zones increased sales and more industrial zones increased the Carbon monoxide and job

Bel: 6/29/16 02:45 PM

good

Justine: 6/29/16 02:45 PM

That sounds right

Justine: 6/29/16 02:45 PM

I feel I need to know more about zoning and its implications.

Ryan: 6/29/16 02:45 PM

I think it was very hard to change anything without having repercussions in a different category. It was definitely challenging to try and satisfy all of the different demands of the stakeholders.

Ryan: 6/29/16 02:45 PM

Several

Justine: 6/29/16 02:45 PM

I tried to change carbon monoxide but clearly it didn't work.

Nic: 6/29/16 02:45 PM

I feel like I was just randomly changing industrial plots to open space/wetlands for more nesting sites and less carbon emissions but I feel like if I really knew how to successfully zone, the outcome would be better.

Nic: 6/29/16 02:45 PM

Also several indicators

Justine: 6/29/16 02:45 PM

It seems almost impossible to please every stakeholder because you have to sacrifice jobs and sales to reduce carbon emissions and increase nesting sites, so we will have to compromise.

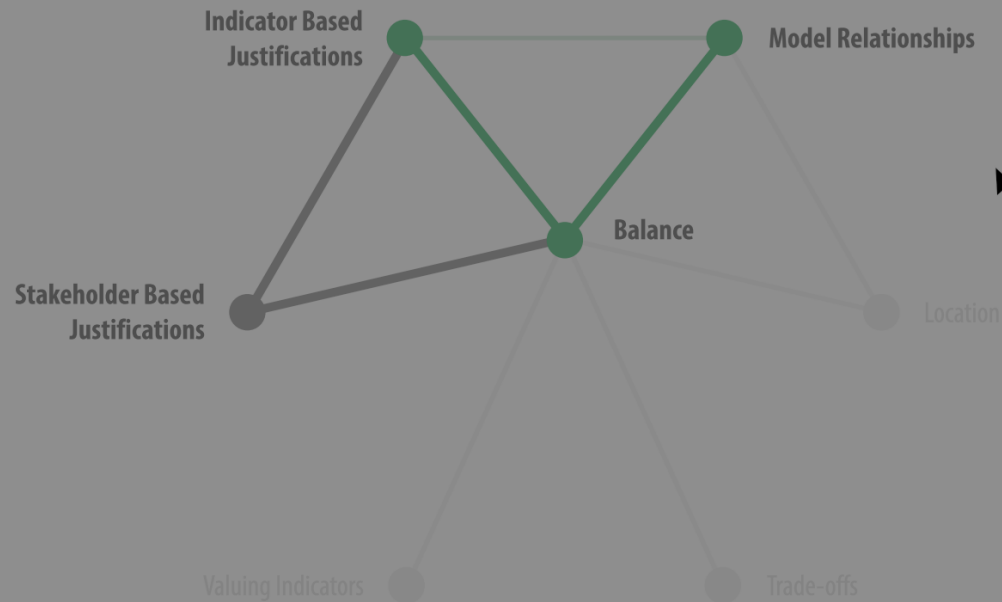
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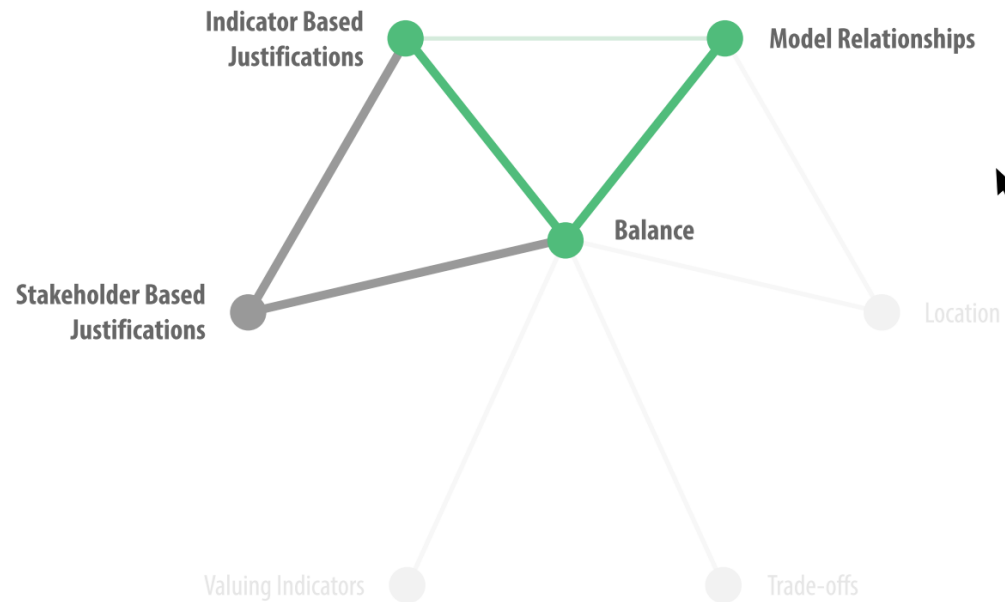
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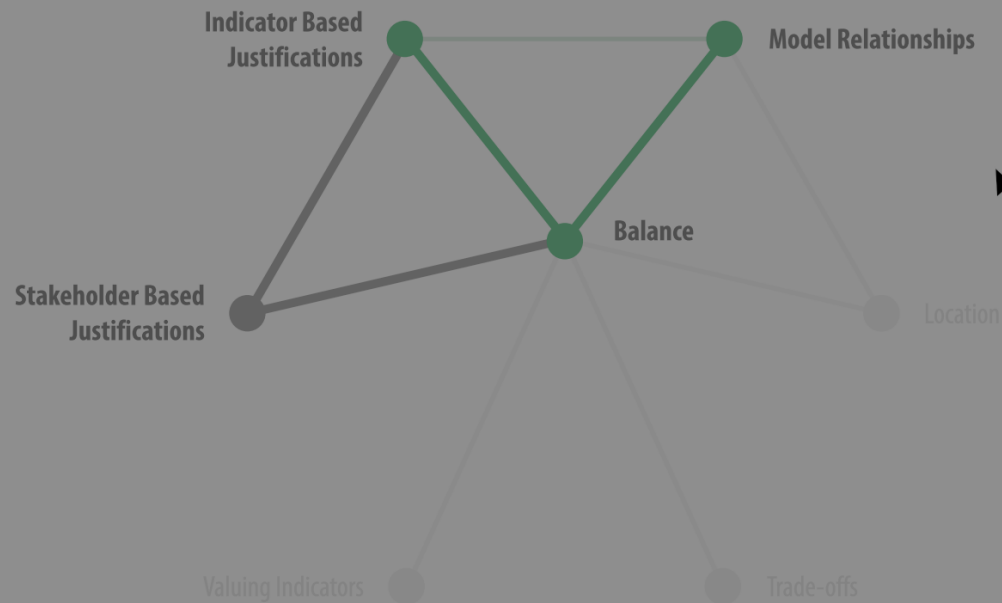
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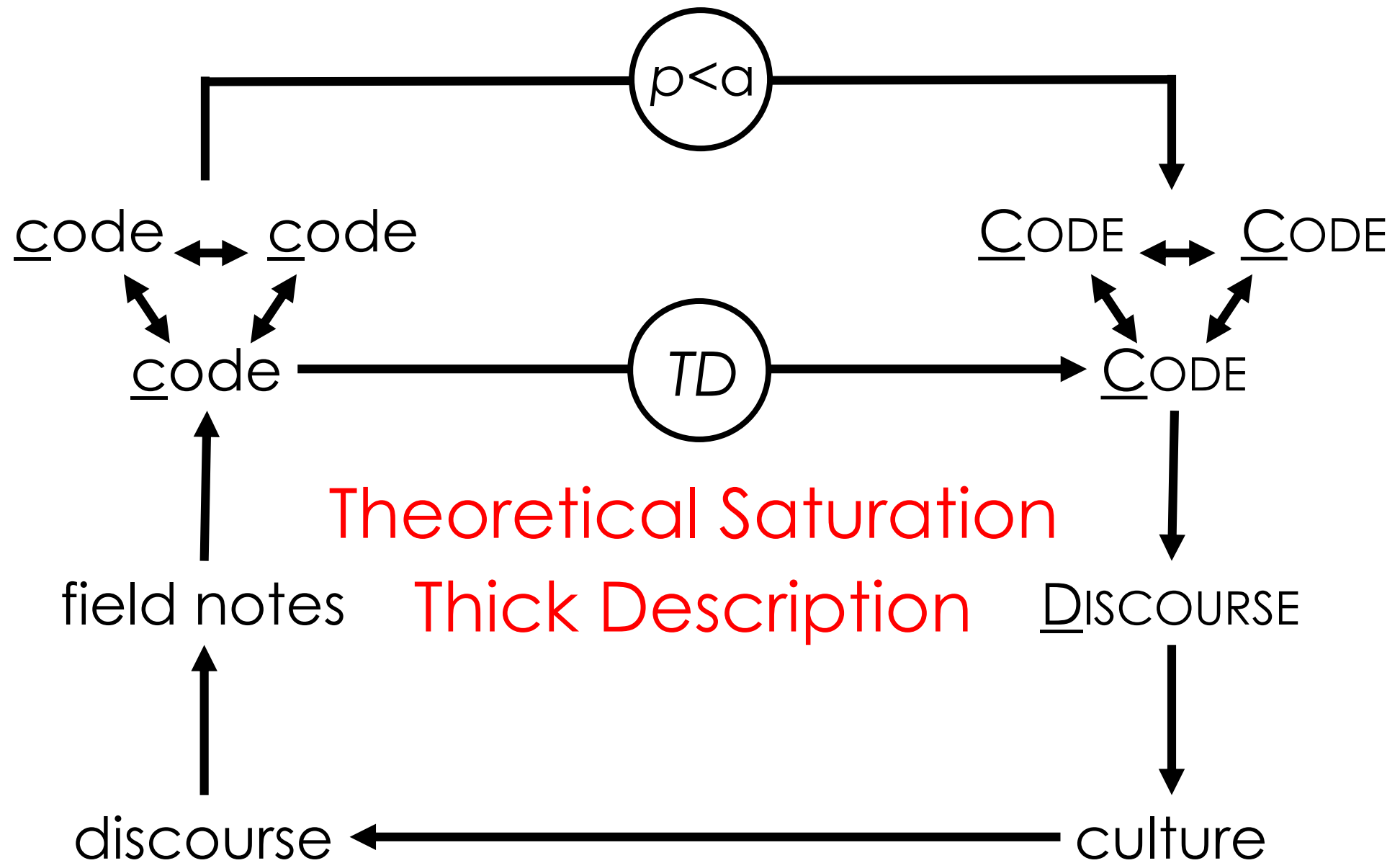
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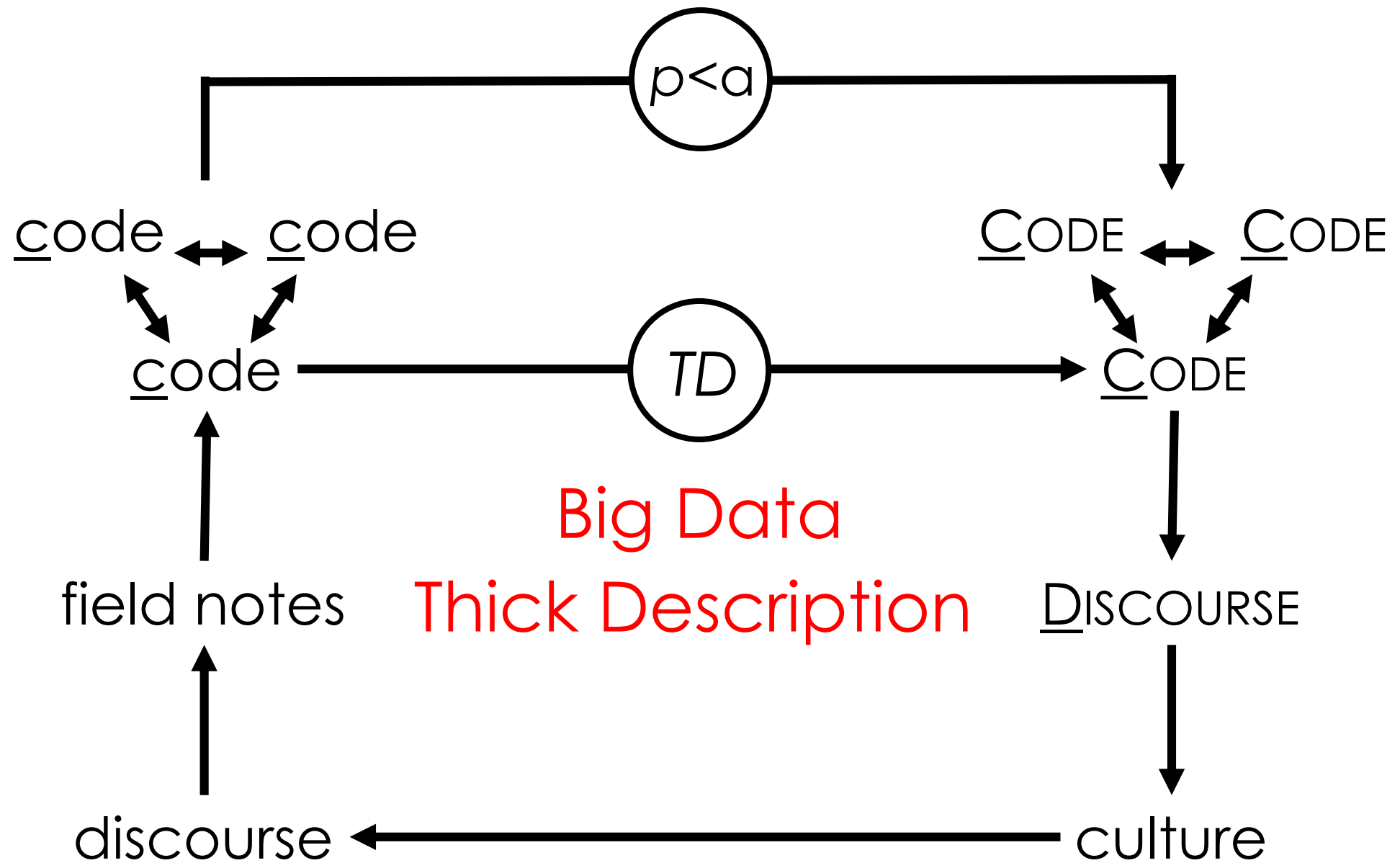
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“The essential task of [ethnography] is not to codify abstract regularities but to make thick description possible,
not to generalize across cases but to *generalize within them*.”

- Clifford Geertz

See Shaffer and Serlin (2004), *What good are statistics that don't generalize?*



Art Graesser
Psychology



Kris Scopinich
Outreach
Education



Morten Misfeldt
Math Education



Zhijiang Cai
Computer
Science



Naomi Chesler
Engineering



Jeff Linderth
Engineering



Asli Gocmen
Urban Planning



Mike Zinn
Engineering



Ken Frank
Statistics



Lew Friedland
Journalism



Dragan Gašević
Learning
Analytics



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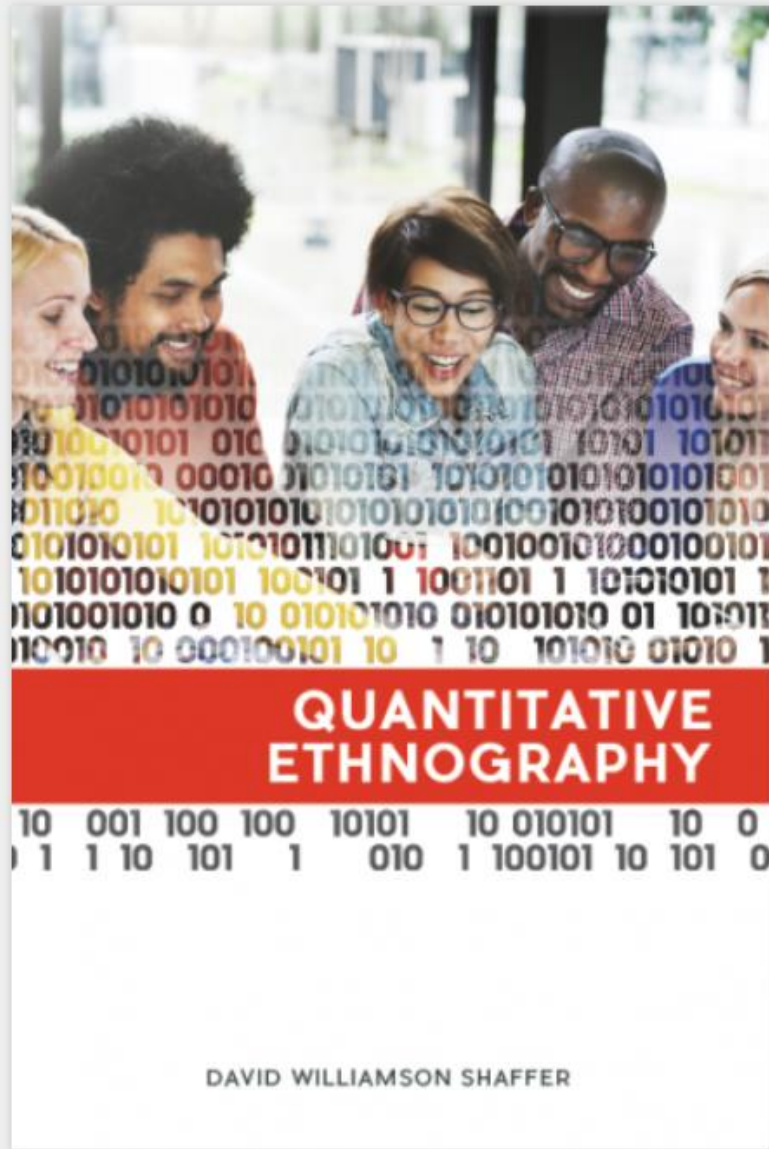
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MORTEN MISFELDT
Professor of Education, Learning and Philosophy
Aalborg University



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