Creative Output in a Market Context

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Main Questions

Does Copyright increase Creative production?

To try and answer this question it is separated into two main questions below.

- Do Economic Rights (ER) increase creative output?
- Does Attribution increase creative output?

Existing Arguments on Copyright

The research presented will be discussed in light of two opposing arguments about the effectiveness of copyright.

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- Landes & Posner argue that authors would have insufficient incentive to create if copyright law did not exist (Landes & Posner, 1989).
- Boldrin & Levine argue that intellectual property rights stifle innovation and are mainly used as tools for rent seeking (Boldrin & Levine, 2013).

Context for Economic Rights and Attribution

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"Man is least himself when he talks in his own person. Give him a mask, and he will tell you the truth."
- Oscar Wilde

Existing Literature

There is existing work on copyright incentives and attribution, although there is a distinct lack of empirical evidence regarding the effectiveness of copyright (Atiq 2013, Howe 2013).

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In Buccafusco et al 2014 the authors tested whether higher copyright thresholds would spur creativity and found that this was true for high copyright thresholds.

Sprigman et at 2015 looked into whether attribution was valuable for the author and found that they were willing to accept a lower price for their work if they could gain attribution rights.

Market Description

Creative markets are, to a large extent, winner takes all markets. Examples include the publishing and music industry (Kretschmer and Hardwick 2007, Kretschmer 2012).

Professional authors the median income in the UK was 12.330, 64% of the national gross median wage, and in Germany it as 42% of the median income (Kretschmer and Hardwick 2007).

Creators Market Decisions

Taking the perspective of a creator one can maximise their chances of "winning" or gaining rewards by focusing on the quantity and quality of the creation.

There is a natural trade-off between quantity and quality, assuming there are scarce resources, such as, time or money.

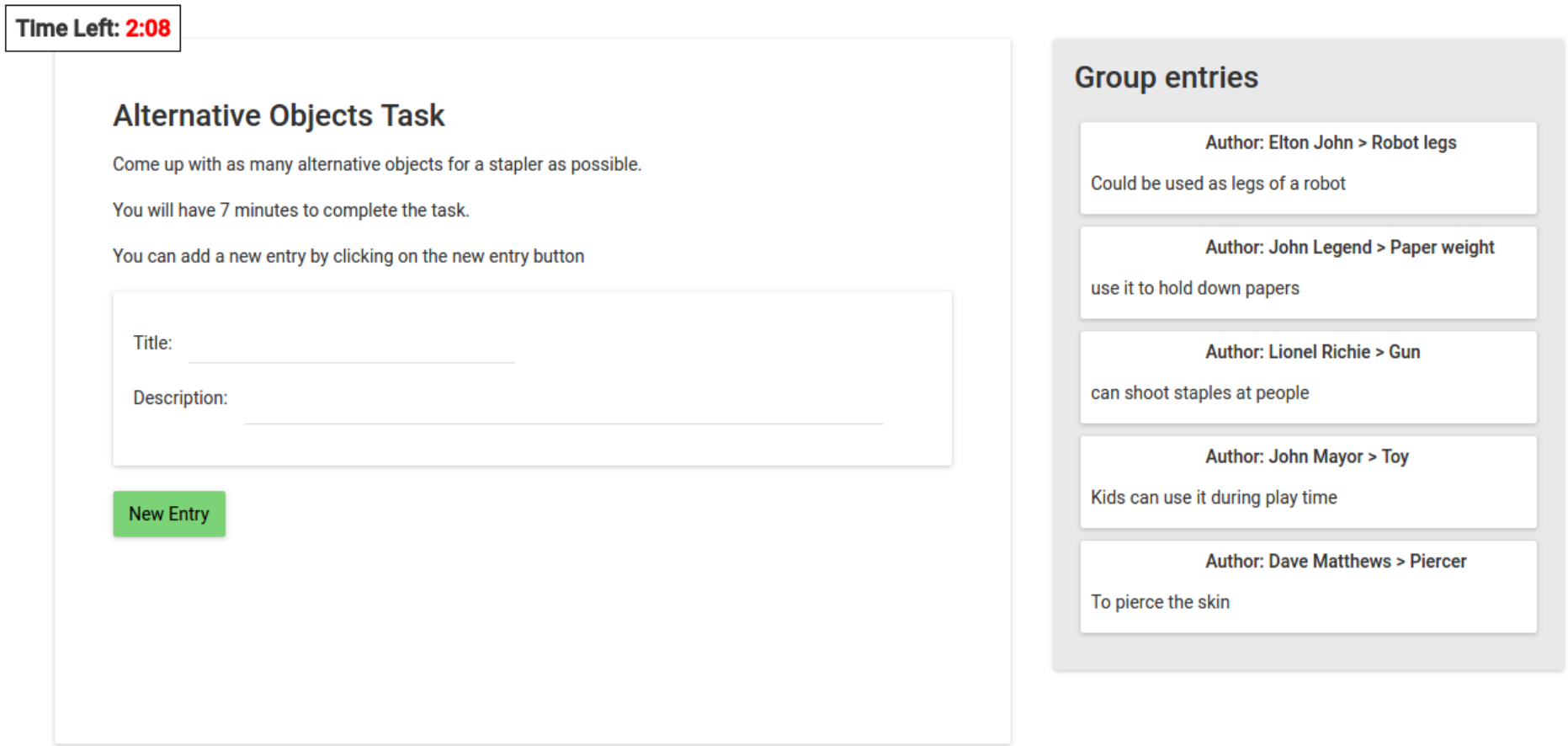
Thus to maximise the chance to "winning" in the market place an individual will choose between the two.

Creativity Tasks

There were two creativity tasks used.

1. Divergent thinking task (Torrance, 1962)
2. Figural Task (Wallach and Kogan 1962, Zeng et al 2011)

Divergent Task (Both Rights)



Figural Task (Neither Right)

Time Left: 3:24

Alternative Objects Figural Task

Come up with as many alternative objects for the figure below as possible.

You will have 7 minutes to complete the task.

You can add a new entry by clicking on the new entry button

Title: Progress

Description: A figure as a metaphor for progress in my PhD

New Entry

Group entries

string

a piece of string on the table

Wave

It could be a wave in the ocean

Participant Results (Both Rights)

Results Summary

Here you can see you performance with respect to ther other participants within your group:

Rank	Participant	Stars	Score	Pay
1	John Mayor	1 0 0 0 0	5	£5.55
2	Dave Matthews	0 1 0 0 0	4	£2.1
3	Lionel Richie	0 0 1 0 0	3	£1
4	Elton John	0 0 0 1 0	2	£0.5
5	John Legend	0 0 0 0 1	1	£0

Continue

Participant Results (Neither Right)

Results Summary

Here you can see you performance with respect to ther other participants within your group:

Rank	Participant	Stars	Score
1	Jaakko Miettinen	0 1 0 1 0	6

Continue

Similarities Instructions

Instructions for Similarity rounds

This round is completely anonymous and will not affect your pay.

A list of ideas will be shown and you are to judge whether any two are similar. If a similarity identified more than once, the later entry will be disregarded in following stages.

Similarity guidelines:

1. Ideas are exact copies of each other.

2. Idea is largely expressed in an existing entry.

Ideas should be originally expressed and not be simply rewordings of each other

Example:

The following is a similarity judging example, but the final decision is up to you. Consider the task: "come up with alternative object for a coat hanger":

1.	**Back Scratcher** Bent to scratch the back	**Similar to:**	2	
2.	**Leg Scratcher** Bent to scratch the leg	**Similar to:**	1	
3.	**Reaching tool** Moulded in order to reach high places	**Similar to:**		

- 1 and 2 express the same idea similarly and are seen as similar.
- 3 expresses a similar idea differently and so is not similar to the first two.

Favourites Instructions

Favourites rounds

You will be asked to name your 5 favourites ideas by giving them stars.

You will be completely anonymous when giving stars.

The amount of stars an individual receives for his/her ideas will determine his/her rank within their group.

1.	**Reset button pressing tool** A tool that can be used to press reset buttons which cannot be pressed with your fingers	☆ ☆ ☆ ☆ ☆ ✕

I'm ready

Regression

X=The vector of treatment variables.

C=The vector of control variables.

S=The vector of session dummies.

$$y_i = \alpha_i + \beta_1 X_i + \beta_2 C_i + \beta_3 S_i + \varepsilon$$

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- Number of ideas created in the task
- Creativity Score

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Three main Dependent Variables Considered

- Number of ideas created in the task
- Creativity Score
- Subjective Score

Estimation

Controls Used in All Regressions

Variable	Reason	Cite
Creative Efficacy	Confidence can correlate with creativity	Bandura (2006)
Risk Taking Behaviour	Risk attitudes correlate with pay preferences	Niederle and Vesterlund (2007)
Ambiguous Risk	Creative Market exibit ambiguous risk	Charness and Grieco (2014)
Handedness	Left handedness associated with creativity	Wolman (2012), Coren (1995)
Creative Family	Environment has a large effect on creativity	Hennessay (2010), Abbing (2010)
More in Creative Fields	Do people think they can make more in arts?	Abbing (2011)
Famous Due to Art	Do people want to become famous due to art?	Abbing (2011)
English Speaking	Performance can depend on language skills	
Age	Age can affect creativity	
Institution Dummy	Environment has a large effect on creativity	Hennessay (2010), Abbing (2010)
Art Hobby Dummy	Can be a proxy for intrinsic motivation	

Number of Ideas in Each Task

	Divergent (1)	Figural (2)	Combined (3)
Attribution	-0.74	-0.767	-1.507
	(0.7)	(0.7)	(1.29)
Economic	-1.211*	0.124	-1.087
	(0.71)	(0.79)	(1.42)
Both	1.679*	1.62	3.361*
	(0.94)	(1.11)	(1.91)
N	198	198	198
Means	6.44	9.9	16.33

Notes: $*p < 0.1, **p < 0.05, ***p < 0.01$.
Robust standard errors in parenthesis.

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Creativity Scores

Creativity Score includes

- Fluency = Number of Ideas. (Torrance 1962)
- Flexibility = How many different categories, from 7 given, did the participants ideas fall into.
- Novelty = Judges gave a point for every idea they thought was novel, given a definition for novel.

Similar methods used in (Fink et al. 2007, Runco, Millar, et al. 2010, Runco 1986, Charness and Grieco 2014, Mooreet al. 2009)

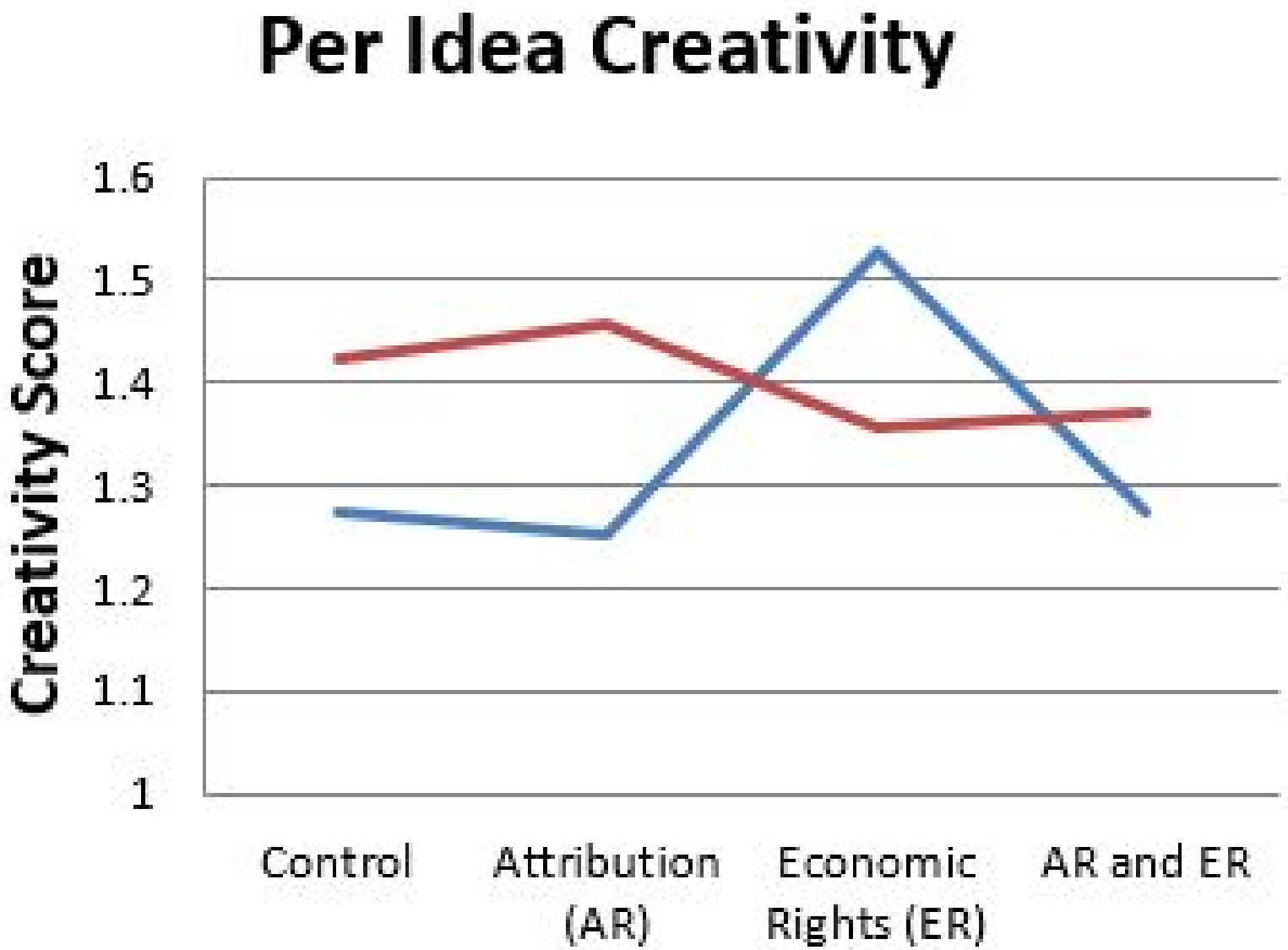
- Humour = Judge game a point for every idea which they thought as humorous. Measure suggested in (Kim 2006)

Combined Overall and Per Idea Creativity

	Total Creativity			Per Idea Creativity		
Rights	(1)	(2)	(3)	(4)	(5)	(6)
Attribution	0.638		-1.552	0.047		0.17
	(1.38)		(1.89)	(0.09)		(0.13)
Economic		0.571	-1.707		0.072	0.141
		(1.38)	(1.96)		(0.09)	(0.1)
Both			4.441*			-0.19
			(2.64)			(0.17)
r2	0.12	0.12	0.135	0.192	0.194	0.201
N	103	95	198	103	95	198

Notes: $*p < 0.1, **p < 0.05, ***p < 0.01$. Robust standard errors in parenthesis.

Per Idea Creativity



Subjective Scores

Subjective judgments have been suggested as an alternative to creativity measures Silvia et al. (2008).

Judge Subjective Score

- They gave a score from 1-5 stars (the more the better) if they liked the idea and 0 stars if they did not like the idea.

Correlation between the Judges & Participant

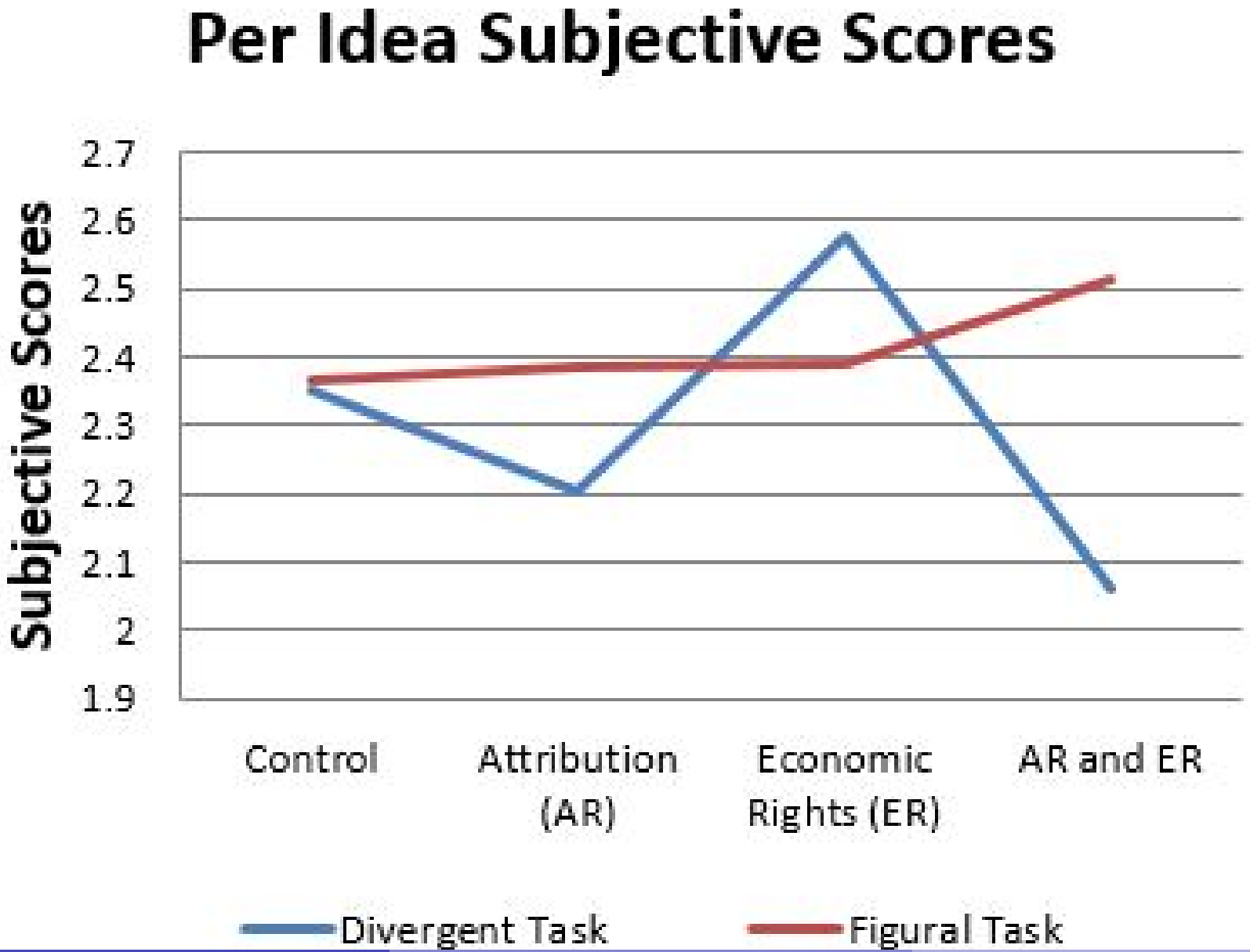
	Judges Score		Participants Score	
Total Scores	Divergent Task	Figural TasK	Divergent Task	Figural Task
Judge Score	1			
Judge Score	0.4844*	1		
Participant	0.4962*	0.3737*	1	
Participant	0.3699*	0.4008*	0.4197*	1

Combined Judges Subjective Score

	Total Subjective Score			Per Idea Subjective Score		
	(1)	(2)	(3)	(4)	(5)	(6)
Attribution	-0.557		0.216	0.039		0.692*
	-2.49		-3.79	-0.24		-0.36
Economic		2.609	3.393		0.066	0.754**
		-2.5	-3.73		-0.24	-0.31
Both			4.441*			-1.328***
			-2.64			-0.46
r2	0.145	0.151	0.151	0.21	0.21	0.246
N	103	95	198	103	95	198

Notes: $*p < 0.1, **p < 0.05, ***p < 0.01$. Robust standard errors in parenthesis.

Per Idea Judge Scores



Recap of Results

Results suggest that overall there is a strategic decision being made based on the quantity and quality of submissions in the divergent task.

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There is evidence that economic rights and attribution work as substitutes in when considering the number of ideas created.

The End

Thank you!

Extrinsic Motivation

Creativity is a process which requires a heuristic or open-ended approach compared to algorithmic tasks which have a single obvious solution (Amabile 2012)

If extrinsic motivators administered in a controlling way it could decrease intrinsic motivation and thus performance but if it is constructive and recognizes people's competence the effect on creative performance would more likely be positive (Amabile 2012)

It is important to look into the interplay between intrinsic and extrinsic motivation as external incentives can crowd out intrinsic ones (Frey and Oberholzer-Gee 1997, Amabile 2012)

Intrinsic Motivation & Creation

There is agreement in psychology literature that intrinsic motivation is an important part, if not the most important part, of motivating creativity (Amabile 1997, Morningstar 2012, Grant and Berry 2012).

Intrinsic motivation being the motivation that comes from within an individual. Which is said to be more impartant to artists compared to other professions (Frey and Oberholzer-Gee 1997)

It is also theorised that the reason artists create is the need for self expression (Abbing 2012).

Number of Ideas in the Divergent Task

	Number of Ideas in the Divergent Task				
	(1)	(2)	(3)	(4)	(5)
ER	-1.327**	-1.192	-1.246***	-1.211*	-1.286***
	(0.67)	(0.73)	(0.47)	(0.71)	(0.47)
Attribution	-0.818	-0.574	-0.15	-0.74	-0.279
	(0.65)	(0.68)	(0.48)	(0.7)	(0.51)
ER and Attribution	1.787*	1.756*	0.658	1.679*	0.668
	-0.94	-0.96	-0.65	-0.94	-0.64
Controls	no	yes	yes	yes	yes
Figural Ideas	no	no	yes	no	yes
Session Dummies	no	no	no	yes	yes
r2	0.022	0.144	0.569	0.206	0.593
N	198	198	198	198	198

Notes: $*p < 0.1, **p < 0.05, ***p < 0.01$. Robust standard errors in parenthesis.

Number of Ideas in the Divergent and Figural Task

	Divergent Task			Figural Task		
	(1)	(2)	(3)	(1)	(2)	(3)
Pay	-1.327**	-1.192	-1.211*	0.062	0.087	0.124
	(0.67)	(0.73)	(0.71)	(0.76)	(0.8)	(0.79)
Attribution	-0.818	-0.574	-0.74	-0.869	-0.687	-0.767
	(0.65)	(0.68)	(0.7)	(0.74)	(0.68)	(0.7)
Pay and Attribution	1.787*	1.756*	1.679*	1.818*	1.78	1.682
	-0.94	-0.96	-0.94	(1.06)	(1.14)	(1.11)
Controls	no	yes	yes	no	yes	yes
Session Dummies	no	no	yes	no	no	yes
r2	0.022	0.144	0.206	0.032	0.133	0.169
Mean	6.44	6.44	6.44	9.9	9.9	9.9
N	198	198	198	198	198	198

Notes: * $p < 0.1, ** p < 0.05, *** p < 0.01$. Robust standard errors in parenthesis.

Creativity Scores

Creativity Score includes

- Fluency = Number of Ideas. (Torrance 1962)
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Overall Creativity in Both Tasks

	Divergent Task			Figural Task		
	(1)	(2)	(3)	(1)	(2)	(3)
ER	-0.493	-0.223	-0.401	-0.311	-0.035	-0.056
	(0.7)	(0.73)	(0.76)	(0.77)	(0.81)	(0.77)
Attribution	-0.718	-0.448	-0.346	-0.669	-0.213	-0.427
	(0.69)	(0.7)	(0.7)	(0.75)	(0.78)	(0.75)
ER and Attribution	1.693*	1.471	1.272	1.561	1.209	1.324
	(0.99)	(1.01)	(0.99)	(1.09)	(1.12)	(1.15)
Controls	no	yes	yes	no	yes	yes
Session Dummies	no	no	yes	no	no	yes
r2	0.018	0.1	0.212	0.015	0.088	0.101
N	198	198	198	198	198	198

Notes: * $p < 0.1, ** p < 0.05, *** p < 0.01$. Robust standard errors in parenthesis.

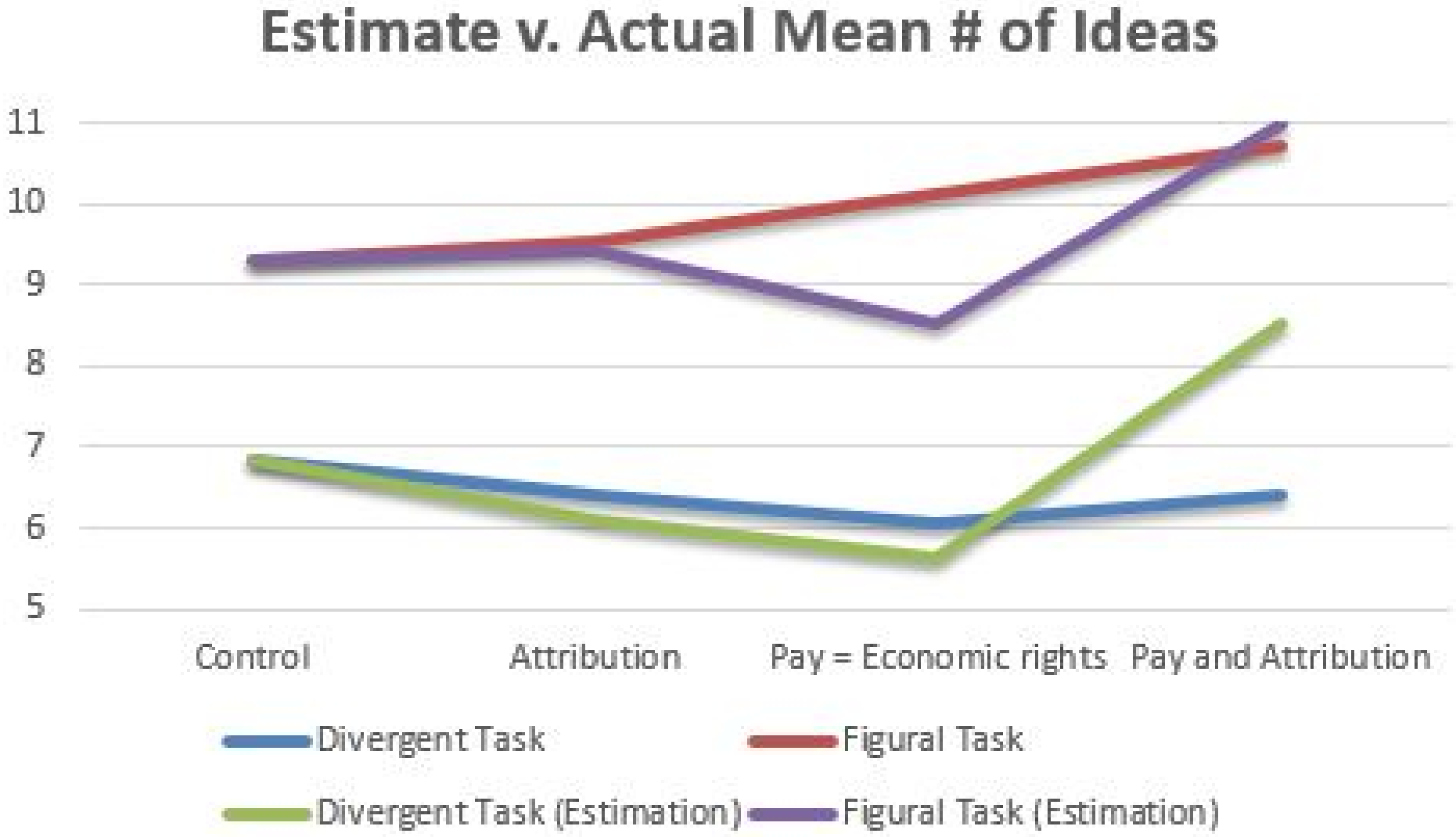

Figure: Number of ideas in both Tasks

Creativity

	Divergent Task			Figural Task		
	(1)	(2)	(3)	(1)	(2)	(3)
ER	-0.493	-0.223	-0.401	-0.311	-0.035	-0.056
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Notes: $*p < 0.1, **p < 0.05, ***p < 0.01$. Robust standard errors in parenthesis.

Creativity Per Idea for Each Task

	Divergent Task			Figural Task		
	(1)	(2)	(3)	(1)	(2)	(3)
ER	0.186**	0.208**	0.197**	-0.009	0.025	0.016
	(0.09)	(0.09)	(0.08)	(0.06)	(0.07)	(0.07)
Attribution	0.034	0.026	0.088	0.07	0.09	0.066
	(0.09)	(0.09)	(0.07)	(0.06)	(0.06)	(0.06)
ER and Attribution	-0.064	-0.085	-0.098	-0.135	-0.173*	-0.151*
	(0.13)	(0.13)	(0.12)	(0.09)	(0.09)	(0.09)
Controls	no	yes	yes	no	yes	yes
Session Dummies	no	no	yes	no	no	yes
r2	0.031	0.123	0.279	0.027	0.109	0.168
N	198	198	198	198	198	198

Notes: $*p < 0.1, **p < 0.05, ***p < 0.01$. Robust standard errors in parenthesis.

Overall Judges Subjective Score

	Divergent Task			Figural Task		
	(1)	(2)	(3)	(1)	(2)	(3)
Pay	-0.453	0.565	0.216	2.979	3.698	3.054
	(1.77)	(1.79)	(1.89)	(2.32)	(2.36)	(2.41)
Attribution	-0.275	0.895	0.838	-0.572	0.548	-0.668
	(1.73)	(1.85)	(1.98)	(2.22)	(2.21)	(2.29)
Pay and Attribution	2.093	0.587	0.384	-0.459	-1.971	-1.77
	(2.54)	(2.68)	(2.7)	(3)	(3.09)	(3.09)
Controls	no	yes	yes	no	yes	yes
Session Dummies	no	no	yes	no	no	no
r2	0.006	0.081	0.132	0.018	0.071	0.139
Mean	14.2	14.2	14.2	23.2	23.2	23.2
N	198	198	198	198	198	198

Notes: * $p < 0.1, ** p < 0.05, *** p < 0.01$. Robust standard errors in parenthesis.

Per Idea Judges Subjective Score

	Divergent Task			Figural Task		
	(1)	(2)	(3)	(1)	(2)	(3)
Pay	0.284	0.405	0.376	0.357*	0.426**	0.365**
	(0.24)	(0.26)	(0.27)	(0.19)	(0.19)	(0.18)
Attribution	0.322	0.392	0.447	0.274	0.331*	0.243
	(0.27)	(0.27)	(0.27)	(0.19)	(0.2)	(0.19)
Pay and Attribution	-0.459	-0.632	-0.652*	-0.558**	-0.685**	-0.664***
	(0.37)	(0.39)	(0.38)	(0.26)	(0.26)	(0.25)
Controls	no	yes	yes	no	yes	yes
Session Dummies	no	no	yes	no	no	yes
r2	0.01	0.057	0.147	0.025	0.117	0.225
Mean	2.31	2.31	2.31	2.41	2.41	2.41
N	198	198	198	198	198	198

Notes: $*p < 0.1, **p < 0.05, ***p < 0.01$. Robust standard errors in parenthesis.