

DATE 29 May 2019

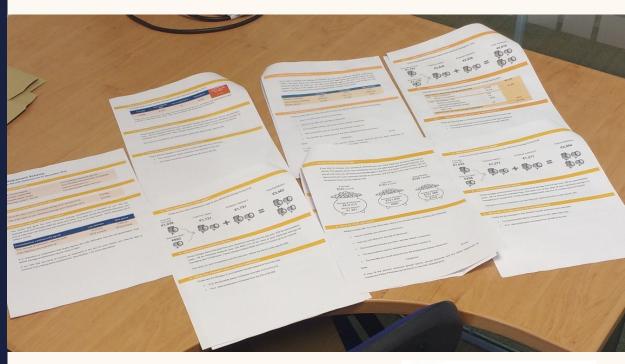
VENUE Pensions and retirement Conference, ESRI

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AUTHORS Pete Lunn Feidhlim McGowan Deirdre Robertson Experimental tests of comprehension and perception of pensions

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An tÚdarás Pinsean The Pensions Authority

Two studies

- Pensions Benefit
 Statement (PBS)
 design
- 2) Understanding money growth

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	Journal of Persion Economics and Pausar (2019), 1–21 doi:10.1017/S147474747219000015	D0
	ARTICLE Supporting decision-making in retirement planning: diagrams on Pension Benefit Statements help: Féidhlim P. McGowan ^{1*} and Peter D. Lunn ^{1,2} ^{1*} The Economic and Social Research Institute, Dublin, Iteland and ^{2*} Department of Economics, University of Dr College, Dublin, Ireland ^{1*} Corresponding author. Email: Energowan@todle ^{1*} Correspond	ublin Trinity decision. In
	Abstract This paper investigates whether exposure to explanatory diagrams can affect a major financial a controlled experiment, participants were given Pension Benefit Statements with or without diagrams, before answering incentivised questions that measured recall, comprehension and diagrams, before answering incentivised questions that measured recall, comprehension and diagrams, before answering incentivised questions that measured recall, comprehension and diagrams, before answering incentivised questions that measured recall, comprehension and diagrams, before answering incentivised questions that measured recall, comprehension and diagrams, before answering incentivised questions that measured recall, comprehension and diagrams, before answering incentivised questions that measured recall, comprehension and diagrams, before answering incentivised questions that measured recall, comprehension and diagrams, before answering incentivised questions that measured recall, comprehension and diagrams, before answering incentivised questions that measured recall, comprehension and diagrams, before answering incentivised questions that measured recall, comprehension and diagrams, before answering incentivised questions that measured recall, comprehension and diagrams, before answering incentivised questions that measured recall the statement of the s	d choice or prehension. ints to advo- pr decisions. y alter deci-
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1) PBS Study: Context

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	IEI Codes: C91; D14; D91 IEI Codes: C91; D14; D91 Introduction There is a growing concern among economists and policymakers that many individuals have insufficient savings for retirement (Crawford and O'Dea, 2012; Mannell et al., 2012; Benartzi and Thaler, cient savings for retirement (Crawford and O'Dea, 2012; Mannell et al., 2012; Benartzi and Thaler, and the saving statement and the saving s
	There is a growing concern (Crawford and O'Dea, 2014)
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- New EU Directive on Pension Benefit Statement (PBS)
- Key provision: "Institutions should provide clear and adequate information to members... to support their decision-making about their retirement" [emphasis added]



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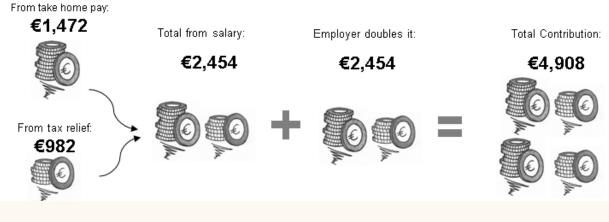
Experiment

- Evidence from educational psychology suggests graphics can aid comprehension and decision making
- Representative sample of 176 consumers
- 2 x 2 x 2 orthogonal design
 - Graphical v tabular display of contributions
 - Graphical v tabular income projections
 - Written v tabular information on costs
- Range of salaries, standard and higher tax rate
- Scenario: "Imagine you are at a friend's house, and your friend asks you to look at a letter they received..."



Contributions Manipulation

These are the total contributions made to your retirement savings for 2016.



V

The table below shows the contributions to your retirement savings during 2016

You paid	Your employer paid	You transferred in	Total paid in	Estimated net cost to you after tax relief*
€2,454	€2,454	€0	€4,908	€1,472

*How does tax relief work? For every €3 from take-home pay you contribute, the government match it with €2 in the form of tax relief. Then your employer will double your contribution.



Money Growth Manipulation



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	If You Pay:	lf You Pay:	You Now Pay:
Monthly Contribution	€246	€184	€123
Your savings at retirement	€386,027	€318,787	€251,546
Monthly pension	€1,239	€1,023	€807



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Costs Manipulation

These charges were deducted from your retirement savings over the last year: €25 for administration costs, €8 for Pensions Authority fees, and €396 (1% of the value of your retirement savings) for managing your investments. These charges totalled €429 over the 12 months up to 31/12/2016.

The return on your investment over the last year, before the above costs was €1,414.

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This table shows how the value of your retirement savings changed during 2016.

Value of your retirement savings at 31/12/2015		€35,590
Add: Total Contributions	€2,752	
Return on Investment	€1,414	€39,755
Less: Administration costs	€25	
Pensions Authority fees	68	
Investment management fee (1% of value of your retirement savings)	€396	
Other costs	€	- €429
Value of your retirement savings at 31/12/2016		€39,326



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Experimental Procedure

Instructed to read PBS for 4 minutes

PBS placed back in envelope, Lottery incentive explained



Stage 1: Answer 8 incentivised recall questions onscreen



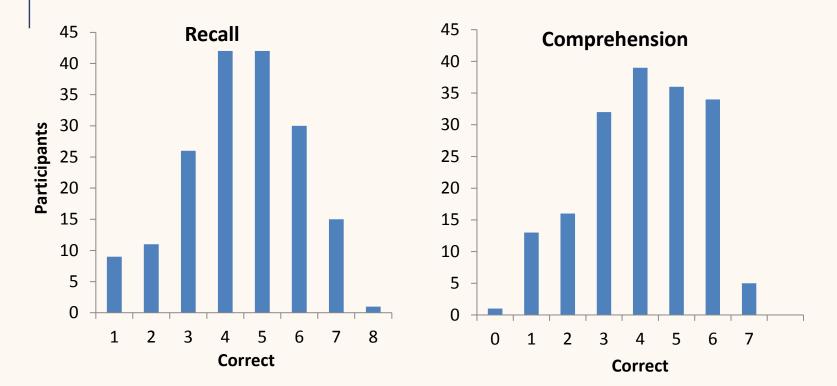
Stage 2: PBS taken back out for 8 incentivised comprehension questions

Stage 3: Answer advice question and provide reasoning Stage 4: Answer demographic, pension questions



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Correct Responses



NB. Answers to contributions questions essentially at chance levels **TAX RELIEF IS INCOMPREHENSIBLE !**







Performance by PBS Format

RECALL	Reject Null?	P Value if Reject
Contributions – largest?	No	N/A
Contributions – total?	Yes	0.025
Savings – THP now?	No	N/A
Savings – increase?	No	N/A
Costs – total?	No	N/A
Costs – return?	No	N/A
COMPREHENSION	Reject Null?	P Value if Reject Null
Contributions – THP > total increase?	No	N/A
Contributions – Salary > total decrease?	No	N/A
Savings – Pension if double contribution?	Marginal	0.095
Savings – If interpolated contribution?	No	N/A
Costs – Charge if same growth?	No	N/A
Costs – Fund growth?	No	N/A

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Advice: models of p("increase") – odds ratios

	(1)	(2)	(3)	(4)
Contributions	.945	1 04	.841	.945
diagram	(319)	(.373)	(.293)	(.348)
Growth diagram	1.86**	2.62***	1.87**	2.54***
	(.635)	(.986)	(.653)	(.962)
Tabular costs	1.67	1.39	1.56	1.39
	(.566)	(.508)	(.541)	(.515)
Male		1.20		1.16
		(.433)		(.420)
Over 35		.671		.771
		(.254)		(.304)
Degree		3.29***		3.10***
		(1.24)		(1.18)
Pension holder		1.94*		1.61
		(.737)		(.651)
Comprehension score			1.35***	1.18
(Stage 2)			(.149)	(.147)
Constant	1.48	.578	.578	.578
	(.477)	(.293)	(.293)	(.293)
Obs.	176	176	176	176



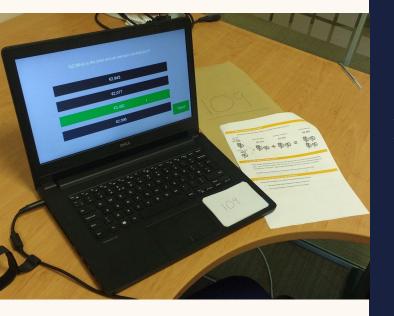
Models of decision rationale

	Contributio	ns rationale	Projection	s rationale
	(1)	(2)	(3)	(4)
Contributions	2.40**	2.84**	1.21	1.24
diagram	(1.10)	(1.38)	(.431)	(.457)
Growth diagram	.750	.929	1.77*	2.01**
	(.330)	(.426)	(.636)	(.747)
Tabular costs	.909	.791	1.77	1.61
	(.398)	(.368)	(.636)	(.602)
Male		.945		1.12
		(.432)		(.409)
Over 35		1.07		.696
		(.514)		(.263)
Degree		3.05**		1.93*
		(1.68)		(.766)
Pension holder		2.34*		.937
		(.1.16)		(.356)
Constant	.120***	.029***	.159***	.120***
	(.056)	(.023)	(.063)	(.067)
Obs.	176	176	176	176

* p<0.1 ** p<0.05 *** p<0.01



PBS Conclusions



Diagrams on PBSs DO make a difference:

- Growth graphic increased inclination to raise contributions
- Increased likelihood of providing relevant rationale for advice

> BUT

- Tax relief impenetrable
- Only marginally improved recall/comprehension
- So do graphics improve decisions?
 - Maybe... they move people towards those with more education and higher comprehension

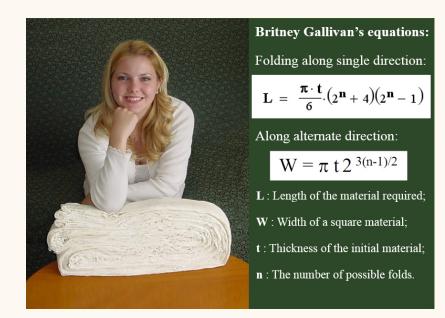
2) Money growth study

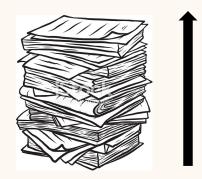
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ESRI Working Paper No. 611	
February 2019	
and pensions:	
Underestimation of money growth and pensions: Experimental investigations	
Experimental Investoj Experimental Investoj Féidhlim P. McGowan ^a , Pete Lunn ^{ab} , Deirdre A. Robertson ^{ac}	
Abstract: People underestimate long-term growth in tarings because they linearize exponential growth – a phenomenon locom as exponential growth biol (600). This bias has implications for multiple (honcaid decision) particularly that along to persisten the second sec	
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- Do people understand money growth?
- Is it subject to systematic bias, e.g. exponential growth bias?
- Does regular saving make a difference?
- Does framing more psychologically realistic framing alter judgement?
- Can we improve judgement?
- Three experiments...



Exponential Growth Bias





So the record is 12, but suppose you could fold it 42 times – how high?

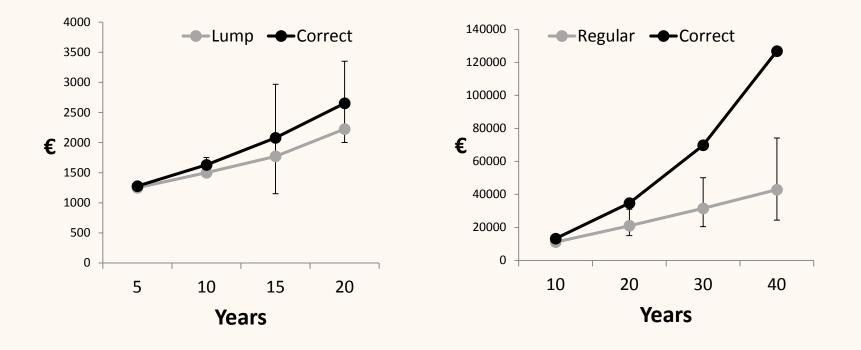
0.0000001 x 2⁴² = 439,805 km

...that's further than the moon!



Experiment 1a

77 members of the public asked to guess amounts if they had €1,000 earning 5% per year, and regular saving of €1,000 per year at 5% per year

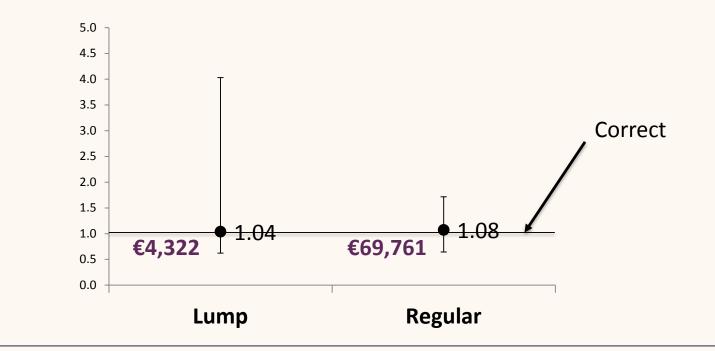




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Experiment 1b: Expert sample

38 attendees at Irish Economics and Psychology Conference asked to guess amounts if they had €1,000 earning 5% for 30 years, and regular saving of €1,000 per year at 5% for 30 years

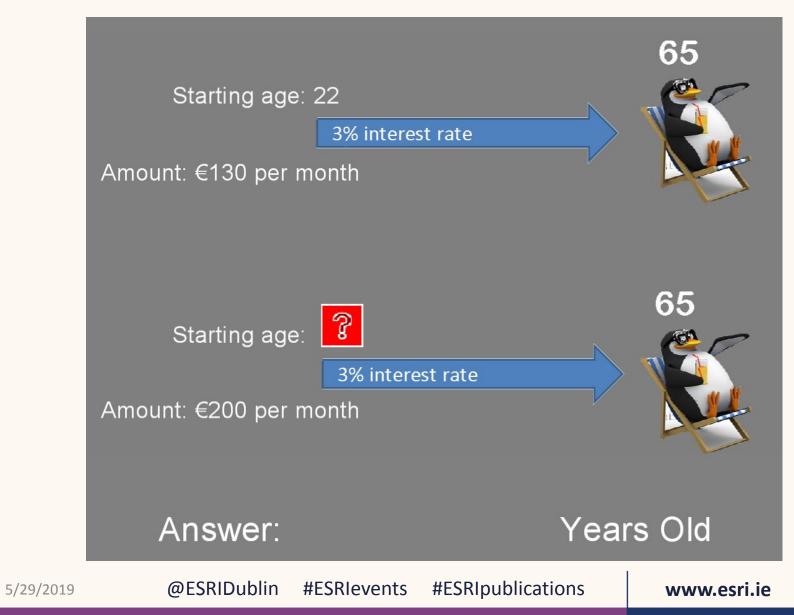






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Experiment 2 – "Years" condition

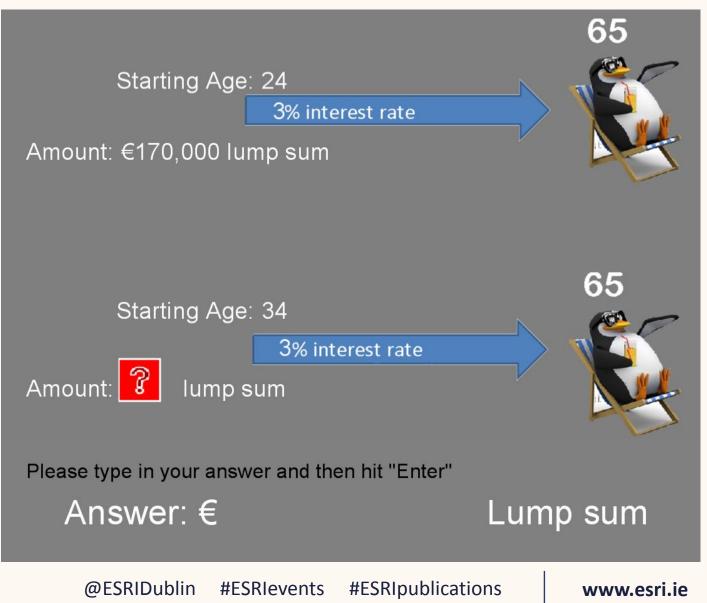




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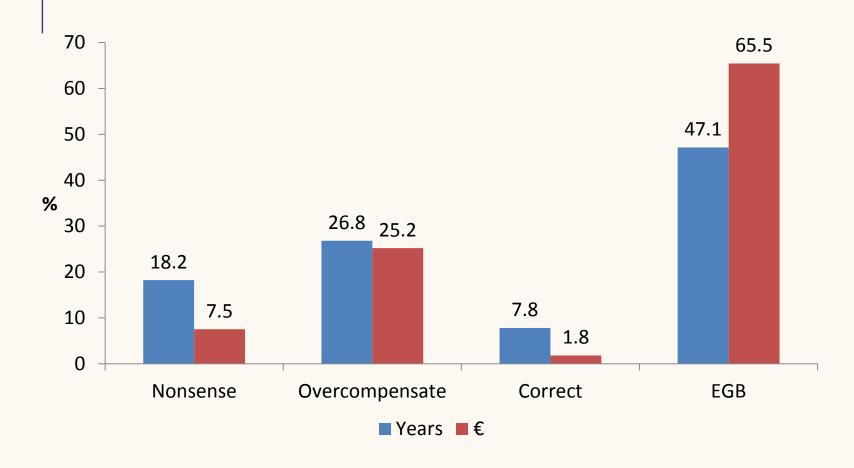
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Experiment 2 – "Euro" condition



Exponential growth bias?

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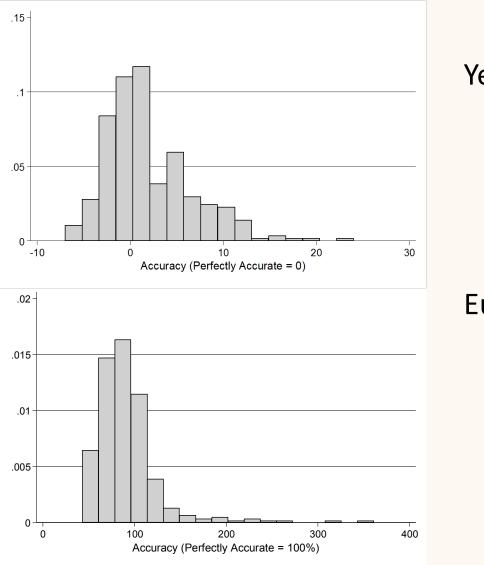
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Very large variability



Years

Euro



Experiment 3: Years Calculator



amount saved by age 65 as if you save €300 per month from age 36.

Next



Experiment 3: Euros Calculator



amount saved by age 65 as if you start at age 35 and save €270 per month.

Next





Who will have more money saved at 65?

John

Starts saving at age: 32

Saves per month: €280

More at 65

Charlie

Starts saving at age: 44

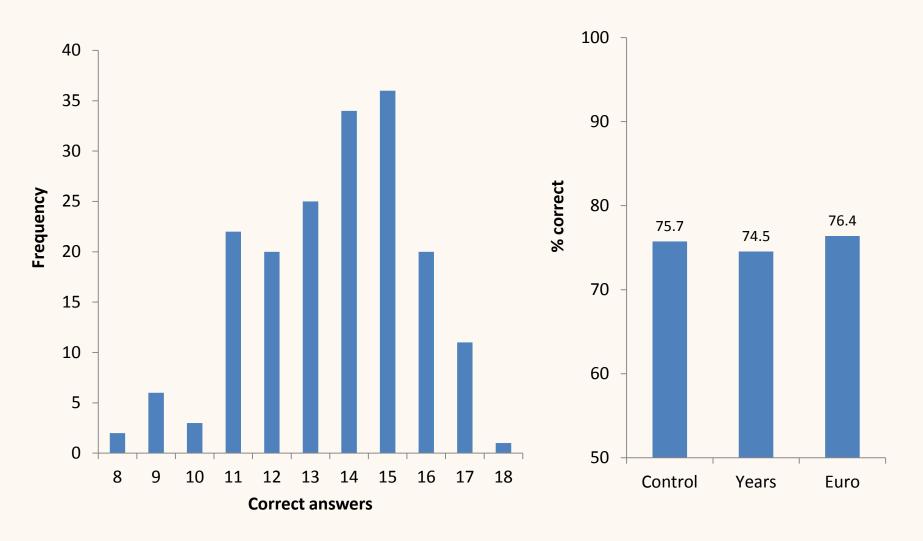
Saves per month: €560

More at 65





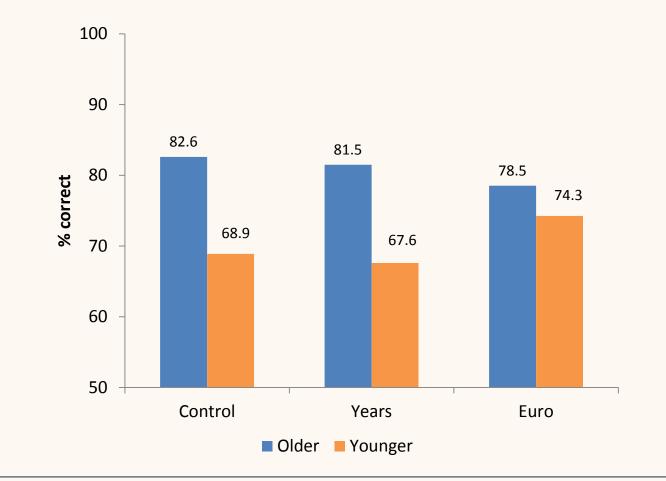
Descriptive results: overall



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Descriptive results: EGB





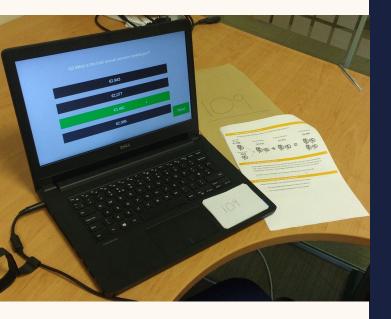
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Money growth conclusions



- Strong underestimation of money growth
- Especially regular savings
- Use of calculators had partial effect
 - > No impact on precision of judgments
 - Euro calculator reduced bias
- Implication: "Cost of delay" more intuitive?



Overall conclusions

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	UNIVERSITY PRESS
	doi:10.1017/S1474747219000015
	ARTICLE
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	Supporting on Pension Benefit State
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	Féidhlim P. McGowan ¹⁺ and Peter D. Lunn ^{1,2} Féidhlim P. McGowan ¹⁺ and Peter D. Lunn ^{1,2}
	letter Recommic and Social Research Institute, Dublin, and
1	¹ The Economic Land College Dublin, Ireland *Corresponding author, Email: <u>imagewanisted.ic</u> *Corresponding author, Email: <u>imagewanisted.ic</u>
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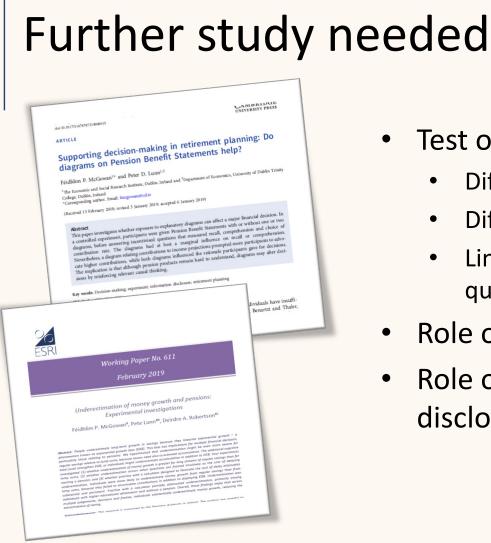
- Pensions are REALLY hard to understand
- Even when people are trying and incentivised
- Especially tax relief and money growth
- Diagrams help a bit

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• Calculators help a bit

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- Test other interventions:
 - Different media?
 - Different explanations?
 - Link to learning literature: quizzes, interactive games?
- Role of money illusion?
- Role of fees and related disclosures?

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