Worries, financial incentives, and cognitive performance: Results from an Online Experiment

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Introduction

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  - Different worries might generate different reactions
  - Motivating under the right circumstances and the pay-offs

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  - ▶ Particular focus poverty and financial worries (Mani et al., 2013; Haushofer and Fehr, 2014)

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- Do the type of worry and incentive structure interact?

- Who is most/least affected?

Introduction: what we do

- In an online survey, we confront students with worrisome consequences of the COVID-19 pandemic on 2 different dimensions:
  - ▶ Labor market
  - ▶ Mental health

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  - ▶ Labor market
  - ▶ Mental health
- Vary incentive scheme:
  - ▶ Linear payment vs. threshold payment
- Explore how individual's characteristics can lead to different reactions

Introduction: COVID context

- Covid pandemic has different effect on people of different ages.

- OECD, April 2020: young people living in OECD countries were mostly worried by the Covid-19 consequences on
  - mental health (56% of respondents)
  - education (44%)
  - employment (43%)

- Young adults experience higher level of distress compared to other age groups (Fetzer et al., 2020; Pierce et al., 2020; McGinty et al., 2020; Etheridge and Spantig, 2020).

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$\Rightarrow$ All our participants in the study are students and thus (more or less) affected by those consequences.

- Emotional state: Participants feel worse and more nervous after reading the Covid-related topics

Introduction: Preview of results

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  - ▶ Piece-rate: No average treatment effect
  - ▶ Threshold: Positive effect for participants that read the Labor Market article

Introduction: Preview of results

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- Mechanisms (exploratory):
  - ▶ Effect seems to be driven by well-off participants (financially & socially)
  - ▶ Labor market + threshold payment seems to motivate some participants and put their focus on performance
  - ▶ Mental health topic + threshold payment seems to demotivate those with low baseline ability score and motivate those with medium score

Experimental Design

Recruitment

- Between February and April 2021
- Invitation sent to all Aix-Marseille University (AMU) students
- Interested students asked to sign up (with official AMU email)
- Personalized survey invitation sent to 500 randomly selected students each week on Tuesday
- Survey had to be completed in max. 90 minutes, and within 3 days of invitation
- Around 1500 participants in total

Participants randomly assigned to brief news article + graph + reflective questions on:

- Labor market topic [▸ Labor Market]
- Mental health topic [▸ Mental Health]
- Animal well-being topic (control 1) [▸ Control Animal]
- Space control topic (control 2) [▸ Control Space]

Variation in payment scheme

Cross-randomization of payment scheme for cognitive performance task

- Piece-rate payment: 1€ per correct matrix
- Threshold payment: 1€ per correct matrix if the number of correct matrices is 5 or higher

Results
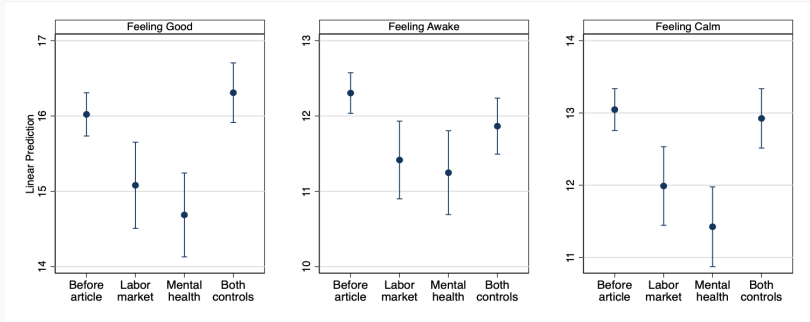
Scores are based on four questions for each mood (two positively phrased, two negatively phrased). Minimum possible 4, maximum possible 24. Includes pre-registered baseline controls: Gender, age, field of study, year of study, number of correct matrices in first round, scholarship recipient. 95% Confidence intervals. All those who finished the survey. ▶ Controls separately

Average Effects: Cognitive performance
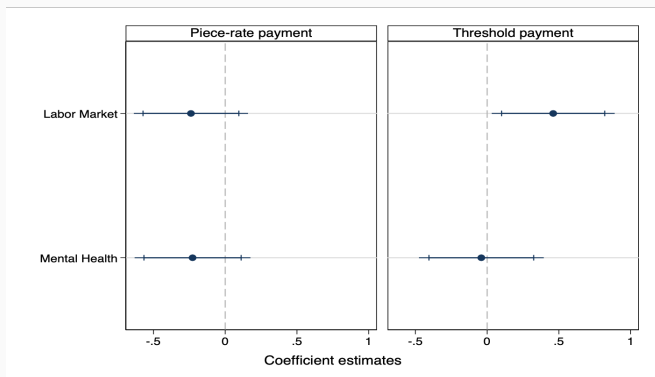
Treatment effects compared to both control treatments with 90% and 95% confidence intervals. Cognitive ability: Number of correct matrices (up to 10). Control mean: 6.95. Includes pre-registered baseline controls: Gender, age, field of study, year of study, number of correct matrices in first round, scholarship recipient. All those who finished the survey. ▶ Regression ▶ Other tasks

Pre-register heterogeneity: ▶ Heterogeneous Effects

- Piece-rate: Weak negative effect for those with a lower mental health and a those with a state scholarship after reading Mental Health article

- Threshold: Positive coefficient for all groups, seems stronger for women and students not close to the labor market.
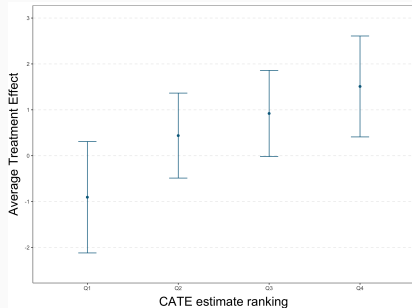
Causal Forest

- Causal Forest to uncover subgroups that react differently to our treatments in a data-driven approach (Wager and Athey (2018)).

- We estimate the Conditional Average Treatment Effect (CATE) on a vector of observable characteristics:

  ▶ baseline controls , financial situation, expectations, family background, mental health measures, Covid-19 experience, and some self-perception questions

- We use the predicted CATE to rank the observations from those with the lowest CATE to the highest CATE and group them into quartiles.

a) Histogram Estimated CATE
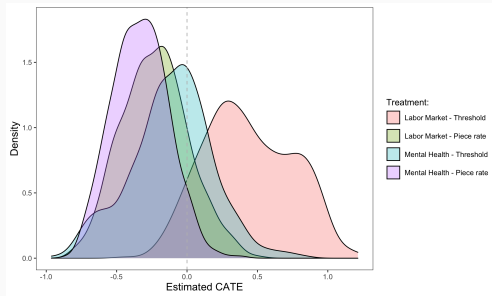
b) ATE estimated rankings

Causal Forest: Effect of Labor market // Threshold

Variable	Highest quartile	Lowest quartile	Diff.	Adj. P-values
Age	20.33	22.64	-2.31	0.00***
Woman	0.70	0.69	0.01	0.89
Scholarship	0.35	0.55	-0.20	0.00***
1st year student	0.40	0.28	0.12	0.02**
Close to labor market	0.06	0.18	-0.12	0.00***
Fatigued	0.80	0.79	0.01	0.85
First round matrices	1.87	1.93	-0.06	0.68
- Field of study: none significant				
- Financial Situation:				
Having financial struggles	0.14	0.36	-0.22	0.00***
Can afford extra expenses	0.89	0.72	0.17	0.00***
Having own salary	0.10	0.20	-0.10	0.01***
- Family Background:				
Migrant	0.03	0.33	-0.31	0.00***
Living alone	0.27	0.29	-0.02	0.69
Father university degree	0.51	0.18	0.33	0.00***
Mother university degree	0.77	0.11	0.66	0.00***
Both parents work	0.78	0.42	0.35	0.00***
- Mental Health: none significant				
- Covid-19 Experience:				
Had Covid-19	0.10	0.06	0.04	0.45
Family member had Covid-19	0.29	0.29	-0.00	0.98
Personal traumatic experience	0.21	0.26	-0.05	0.56
Family member lost job	0.16	0.26	-0.10	0.13
Positive attitude tw vaccination	0.44	0.33	0.11	0.16
Lock-down alone	0.02	0.09	-0.07	0.03**
Seeing friends	2.73	0.99	1.74	0.00***
Going to the university	1.41	1.02	0.39	0.15

Baseline cognitive performance score
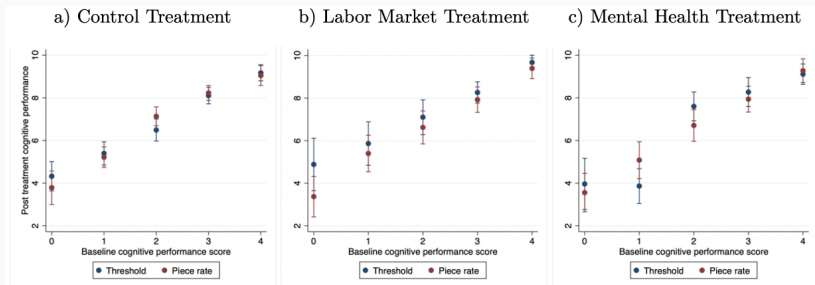
Note: This figure plots the post-treatment cognitive performance of participants as a function of their pre-treatment performance. The regression includes pre-registered baseline controls: Gender, age, field of study, year of study, and scholarship recipient.

Discussion of mechanisms

What effect of worries on cognitive performance?

- Increases the mental load
- Motivation effect, if actionable
- De-motivational effect if not actionable

What effect of threshold payment?

- Designed to be similar to an exam situation
- Motivates to reach the threshold
- De-motivates those who do not believe they will reach the threshold

Discussion

| | Dependent variable: Importance of having | |
| | Good grades | Good career |
	(1)	(2)
Labor Market	0.0615	0.185**
	(0.101)	(0.0911)
Mental Health	0.132	0.0565
	(0.0962)	(0.0919)
Threshold	0.176**	0.155**
	(0.0794)	(0.0735)
Labor Market X Threshold	0.00269	-0.240*
	(0.145)	(0.127)
Mental Health X Threshold	-0.131	-0.148
	(0.141)	(0.134)
Observations	1495	1494

Note: Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Dependent variables range from 1 to 5, where 5 means students rate as indispensable the respective claim. All specifications include baseline controls: gender, age, field of study, year of study, number of correct matrices in first round, scholarship recipient.

Discussion

	Locus of control	Hard work	Chances are determined	What has to happen will happen
	Dependent variable:			
	(1)	(2)	(3)	(4)
Labor Market	-0.405	-0.0641	0.0317	0.0519
	(0.274)	(0.0435)	(0.0427)	(0.0416)
Mental Health	-0.558**	-0.0802*	0.140***	0.0680*
	(0.260)	(0.0434)	(0.0394)	(0.0393)
Threshold	-0.134	-0.0203	0.0359	-0.00174
	(0.208)	(0.0343)	(0.0341)	(0.0339)
Labor Market X Threshold	0.428	-0.00746	-0.0220	-0.0505
	(0.386)	(0.0628)	(0.0609)	(0.0607)
Mental Health X Threshold	0.253	0.0411	-0.144**	0.00458
	(0.379)	(0.0625)	(0.0588)	(0.0577)
Observations	1453	1503	1503	1503
Control Mean	19.22	0.64	0.63	0.63

Note: Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. This table shows the treatment effect on locus of control and the particular questions that drives its effect. From column (2) to (4) the dependent variable is a dummy equal to 1 for students who agree with the respective statements. Column (2): *To succeed, you have to work hard; success has nothing to do with luck.* Column (3): *The opportunities a person has in life depend on the social conditions in which they live.* Column (4): *I often tell myself that what has to happen will happen somehow.* All specifications include baseline controls: gender, age, field of study, year of study, number of correct matrices in first round, scholarship recipient.

Conclusion

Conclusion

- Increasing salience of real-life worries decreases stated well-being.
- No effect on cognitive performance with linear payment scheme.
- Labor market topic increases cognitive performance under threshold payment scheme.
- Motivating effect stronger for those further from labor market and with more financial and social resources/ less vulnerabilities.
- Mental health topic might have the same effect for students with medium baseline ability, while is has a demotivating effect for those with lower baseline ability.
- Potential consequence: Aggravating pre-existing inequalities.

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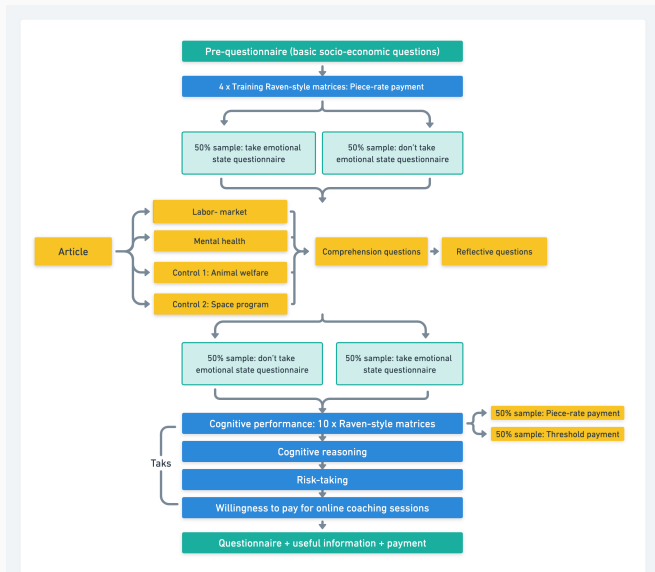
Covid-19 : quand les diplômes n'aident plus à rentrer sur le marché du travail

Quatre jeunes sur dix ont modifié leurs projets professionnels à cause de la crise du Covid-19 : pour les jeunes diplômés, l'insertion professionnelle s'avère plus complexe que prévu aujourd'hui.

Les offres d'emploi accessibles aux jeunes diplômés ont chuté de pratiquement 40% en 2020, par rapport à l'année précédente : c'est l'une des conséquences du Covid-19 sur les 18-24 ans. Selon un récent sondage de l'institut Elabe, 84% des membres de cette tranche d'âge estiment que leur génération va connaître une période de chômage plus forte que les générations précédentes (voir infographie ci-dessous).

Graphique 10. **Taux de chômage au sens du BIT**
En % de la population active

Sur une échelle de 1 à 4, où 1 signifie "Je suis en désaccord complet" et 4 signifie "Je suis entièrement d'accord", veuillez indiquer votre opinion pour la phrase ci-dessous.

	1 - Je suis en désaccord complet	2 - Je suis plutôt en désaccord	3 - Je suis plutôt d'accord	4 - Je suis entièrement d'accord	Ne souhaite pas répondre
Les conséquences économiques de la crise sanitaire diminuent mes chances de trouver rapidement un emploi après l'obtention de mon diplôme.	○	○	○	○	○
Il est probable que je ne sois pas indépendant financièrement tout de suite après mes études et que je doive dépendre d'aides familiales ou d'allocations de l'Etat.	○	○	○	○	○
La crise sanitaire a augmenté mes préoccupations financières.	○	○	○	○	○
La situation économique générale de ma famille s'est dégradée depuis le début de la crise de la Covid-19.	○	○	○	○	○
Les conséquences économiques de la crise sanitaire diminuent mes chances de trouver rapidement un emploi stable (en CDI) qui corresponde à mes centres d'intérêt.	○	○	○	○	○

« Ce reconfinement, c'est la double peine. On est enfermés et en plus, c'est de notre faute » : une jeunesse en détresse psychologique

« Depuis la fin du lycée, Sofia consulte un psychiatre pour apaiser ses crises d'angoisse. Parce qu'elle a beaucoup souffert du premier confinement, elle a fini par abandonner sa licence de mathématiques. A la rentrée, la jeune femme de 19 ans s'est réorientée vers une licence de langues étrangères appliquées : « Déjà en temps normal, l'idée de ne pas réussir m'angoisse. En ce moment, j'ai beaucoup plus peur de décrocher », explique-t-elle, perturbée par le passage de tous ses cours en visio et n'ayant pas eu le temps de tisser des liens avec sa nouvelle promo. »

« Particulièrement touchés par les conséquences de la crise sanitaire en cours, les jeunes cumulent les facteurs de risques en ce qui concerne la dégradation de leur équilibre psychique : le basculement des cours à distance dans l'enseignement supérieur place certains jeunes dans une grande solitude ; avec la disparition d'une grande partie de leurs stages et autres petits boulots, la précarité étudiante prend de l'ampleur, de même qu'un fort sentiment d'inquiétude face à l'avenir.

Selon une vaste enquête nationale menée par l'Observatoire de la vie étudiante (OVE), la moitié des étudiants ont déjà souffert de solitude ou d'isolement pendant le premier confinement (voir graphique ci-dessous). Et près d'un étudiant sur trois présente les signes d'une détresse psychologique.

Taux de dépression dans la population - enquête CoviPrev

— 18-24 ans ⋯ 25-64 ans — 65+
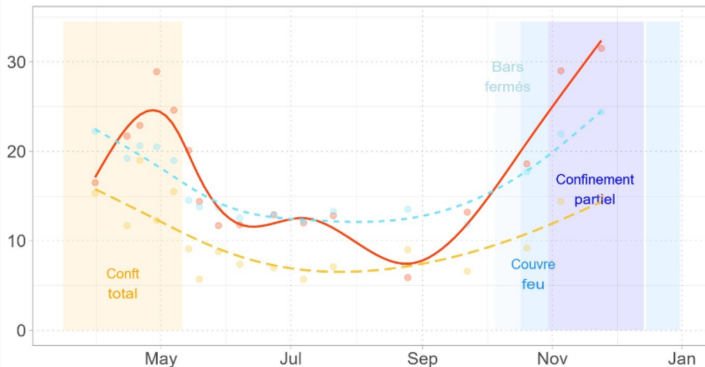
Proportions de dépressions dans la population, enquête CoViPrev (dépression : niveau supérieur à 10 sur l'échelle HAD – *Hospital Anxiety and Depression*

Sur une échelle de 1 à 4, où 1 signifie "Je suis en désaccord complet" et 4 signifie "Je suis entièrement d'accord", veuillez indiquer votre opinion pour la phrase ci-dessous.
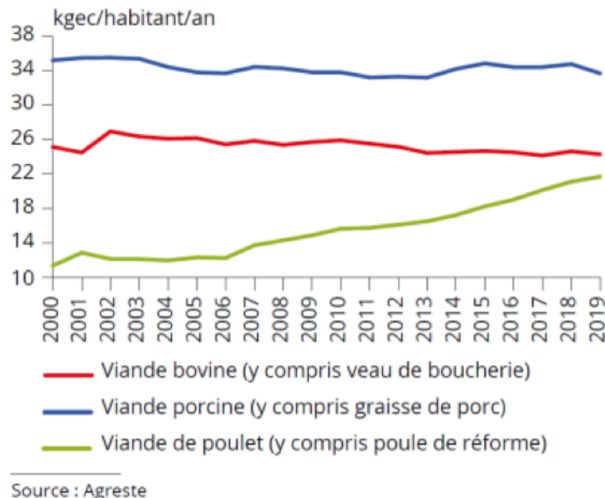
	1 - Je suis en désaccord complet	2 - Je suis plutôt en désaccord	3 - Je suis plutôt d'accord	4 - Je suis entièrement d'accord	Ne souhaite pas répondre
Les périodes de confinement ont généré un niveau de stress important pour moi.	○	○	○	○	○
Devoir suivre les cours à distance et non en présentiel a créé chez moi un grand sentiment de solitude ou d'isolement.	○	○	○	○	○
Il est probable que je consulte un professionnel de santé psychique dans les 6 prochains mois.	○	○	○	○	○
La crise sanitaire m'a empêché de vivre de bons moments avec les autres étudiants.	○	○	○	○	○
La crise sanitaire a empêché ou gâché des célébrations importantes pour moi (anniversaire, fêtes de fin d'année, fêtes de famille...)	○	○	○	○	○

Une proposition de loi pour le bien-être animal débattue ce jeudi à l'Assemblée Nationale

Une proposition de loi en faveur du bien-être animal, notamment portée par le mathématicien Cédric Villani est débattue aujourd'hui en commission à l'Assemblée nationale.

La cause animale avance. Au lendemain des annonces de la ministre de la Transition écologique, Barbara Pompili, en faveur de la faune sauvage captive – sur les delphinariums, les cirques et les spectacles itinérants, les élevages de visons et les parcs zoologiques – l'Assemblée nationale va examiner à partir de ce jeudi en commission (et le 8 octobre dans l'hémicycle) la proposition de loi sur le bien-être animal, portée par le député LREM Cédric Villani et plusieurs de ses collègues, notamment Matthieu Orphelin, proche de Nicolas Hulot, ou Paula Forteza, députés du nouveau groupe Ecologie, Démocratie, Solidarité (EDS).

En effet, cette loi, qui "reprend et aménage une large partie du projet de *Référendum pour les animaux* initié par un collectif de quarante associations ainsi que des dizaines de personnalités du monde économique, culturel ou politique", entend six articles s'attaquer à la souffrance animale. En plus de l'interdiction de "l'élevage des animaux dans le but d'obtenir de la fourrure à partir du 1er janvier 2025" et de l'interdiction des "spectacles d'animaux vivants d'espèces non domestiques dans un délai de cinq ans à compter de la promulgation de la loi" – sujets repris donc par Mme Pompili, les députés proposent de tirer un trait sur "la chasse à courre et les pratiques de chasse équivalentes,

(Graphique tiré de : Agreste, *Synthèses conjoncturelles*, no. 359, juin 2020)

Animal well-being control ▸ back

	1 - Je suis en désaccord complet	2 - Je suis plutôt en désaccord	3 - je suis plutôt d'accord	4 - Je suis entière- ment d'accord	Ne souhaite pas ré- pondre
Il est probable que j'assiste à un « spectacle d'animaux vivants d'espèces non domestiques » au cours de l'an- née à venir.	○	○	○	○	○
Il est important que tous les animaux d'élevage aient un accès à l'extérieur.	○	○	○	○	○
Des animaux élevés en cages produisent de la nourri- ture de mauvaise qualité.	○	○	○	○	○
Je prends en compte des critères de bien-être animal dans mes choix de consommation.	○	○	○	○	○
Je limite ma consommation de viande parce que l'éle- vage industriel ne respecte pas le bien-être animal.	○	○	○	○	○

Nous vous demandons de le lire attentivement. Nous vous poserons ensuite quelques questions à propos du texte. Vous pourrez revenir au texte pour répondre aux questions.

Retour sur la Lune : Joe Biden affiche son soutien au programme Artemis

Jen Psaki, la secrétaire de presse de la Maison Blanche, a déclaré ce jeudi 4 février que le président Joe Biden poursuivrait le programme Artemis visant à faire atterrir à nouveau des humains sur la Lune. En revanche, l'échéance 2024 sera probablement repoussée.

En 2017, l'administration Trump demandait à la NASA de renvoyer des astronautes sur la Lune en 2024 dans le cadre d'un programme nommé ensuite Artemis. À la différence du programme Apollo, en revanche, il ne s'agirait plus de simplement "poser les pieds" sur la surface lunaire. L'objectif sera en effet à terme d'établir des installations permanentes dans la région du pôle sud permettant à des équipages d'effectuer des séjours longue durée dans l'espace.

Nous savions dès le départ que cet objectif de 2024 était peut-être un peu ambitieux. Depuis son élection, Joe Biden ne s'était pas exprimé à propos de la NASA et de ses projets d'exploration lunaire. Certains pensaient même que son administration pouvait annuler le programme Artemis.
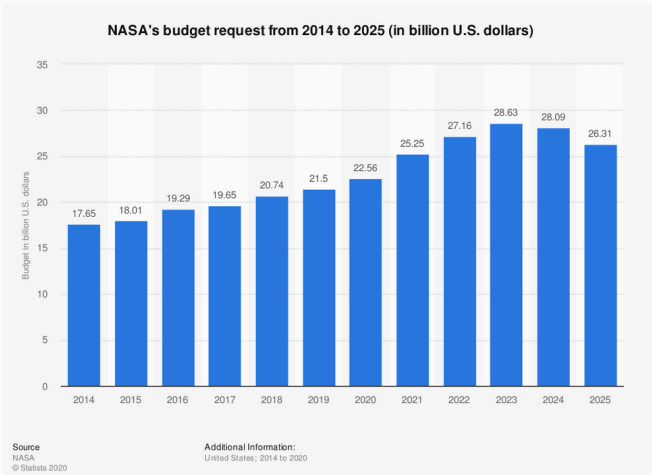
NASA's budget request from 2014 to 2025 (in billion U.S. dollars)

	1 - Je suis en désaccord complet	2 - Je suis plutôt en désaccord	3 - Je suis plutôt d'accord	4 - Je suis entière-ment d'accord	Ne souhaite pas ré-pondre
L'exploration spatiale doit être une priorité pour les gou-vernements.	○	○	○	○	○
La Lune est un bon endroit pour développer de nou-velles connaissances scientifiques et tester de nou-velles technologies.	○	○	○	○	○
Etant donné la raréfaction de nombreux métaux sur la terre, il est urgent d'exploiter de nouveaux gisements sur la lune ou sur mars.	○	○	○	○	○
Il est important de préparer l'installation de colonies hu-maines pérennes dans l'espace pour assurer le déve-loppement de la civilisation humaine.	○	○	○	○	○
Tôt ou tard, nous découvrirons ailleurs dans l'espace une « autre terre » où la vie est possible.	○	○	○	○	○

Nous avons un programme de coaching personnalisé d'insertion professionnelle à offrir.

Ce programme, d'une valeur de 385€, a été spécialement élaboré pour les participants de cette enquête, en partenariat avec l'entreprise de référence en coaching étudiant Futurness.

Le programme se déroulera entièrement à distance et consistera en :

- 3 tests personnels : orientation, personnalité, motivations
- 1 séance de restitution avec un coach professionnel : interprétation des tests et identification de 3 cibles de métiers qui vous correspondent
- 1 heure de coaching individuel portant sur 1 ou 2 thème(s) au choix parmi
  - Confiance en soi & Gestion du stress
  - Méthodologie de travail
  - Soutien psychologique
  - Simulation d'entretien d'embauche

* Voulez-vous acheter un ticket de loterie pour participer au tirage au sort si le prix de ce ticket est de 0.5 € ?

✔ Oui	⊘ Non

* Voulez-vous acheter un ticket de loterie pour participer au tirage au sort si le prix de ce ticket est de 1€?

✔ Oui	⊘ Non

* Voulez-vous acheter un ticket de loterie pour participer au tirage au sort si le prix de ce ticket est de 2€?

✔ Oui	⊘ Non

Data: Balance table on baseline characteristics

Variable	Mean	Labor Market vs Controls		Mental Health vs Controls		Threshold vs Piece-rate	
		Diff	P-values	Diff	P-values	Diff	P-values
Woman	0.66	0.05	0.08*	0.01	0.65	0.01	0.60
Scholarship	0.45	-0.00	0.91	0.05	0.14	-0.00	0.86
Age	21.57	0.04	0.78	-0.10	0.54	-0.19	0.14
First Round Matrices	2.04	0.03	0.72	-0.08	0.29	-0.08	0.22
- Level of study:							
Undergrad	0.70	-0.00	0.89	-0.00	0.97	0.02	0.37
Master and Engineers	0.27	0.00	0.93	-0.01	0.77	-0.02	0.44
PhD	0.03	0.00	0.87	0.01	0.36	-0.00	0.68
- Field of study:							
Arts and Languages	0.14	-0.00	0.85	0.00	0.84	-0.01	0.68
Health Sciences	0.11	-0.00	0.86	-0.00	0.89	-0.01	0.55
Law, Economics, Management	0.25	0.01	0.66	0.01	0.72	0.01	0.82
Humanities and Social Sciences	0.17	-0.02	0.34	0.01	0.83	0.01	0.72
Science and Technology	0.34	0.02	0.55	-0.02	0.58	0.00	0.85
Observations	1503						
Joint orthogonality test			0.88		0.82		0.89

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. P-values reported are from a t-test of equality of means.

Data: Balance table - Piece rate payment

Variable	Mean	Labor Market vs Controls		Mental Health vs Controls	
		Diff	P-values	Diff	P-values
Woman	0.66	0.06	0.13	0.01	0.79
Scholarship	0.45	-0.01	0.81	0.05	0.25
Age	21.66	-0.07	0.74	-0.19	0.38
First Round Matrices	2.08	-0.00	0.98	-0.21	0.05**
- Level of study:					
Undergrad	0.69	0.06	0.18	0.04	0.34
Master and Engineers	0.28	-0.06	0.14	-0.03	0.42
PhD	0.03	0.00	0.77	-0.01	0.62
- Field of study:					
Arts and Languages	0.14	0.01	0.64	0.03	0.29
Health Sciences	0.11	-0.01	0.78	0.00	0.98
Law, Economics, Management	0.25	0.02	0.69	-0.00	0.97
Humanities and Social Sciences	0.16	-0.02	0.48	-0.02	0.52
Science and Technology	0.34	0.00	0.97	-0.01	0.79
Observations	779				
Joint orthogonality test			0.82		0.73

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. P-values reported are from a t-test of equality of means.

Data: Balance table - Threshold payment

| Variable	Mean	Labor Market vs Controls		Mental Health vs Controls	
		Diff	P-values	Diff	P-values
Woman	0.67	0.04	0.36	0.02	0.70
Scholarship	0.44	0.00	0.94	0.04	0.36
Age	21.47	0.17	0.44	0.01	0.97
First Round Matrices	2.00	0.06	0.58	0.05	0.65
- Level of study:					
Undergrad	0.72	-0.07	0.10*	-0.05	0.26
Master and Engineers	0.26	0.07	0.09*	0.02	0.64
PhD	0.02	-0.00	0.93	0.03	0.07*
- Level of study:					
Arts and Languages	0.13	-0.02	0.45	-0.03	0.41
Health Sciences	0.10	0.00	0.97	-0.01	0.82
Law, Economics, Management	0.25	0.01	0.82	0.02	0.58
Humanities and Social Sciences	0.17	-0.02	0.52	0.03	0.35
Science and Technology	0.34	0.04	0.42	-0.02	0.60
Observations	724				
Joint orthogonality test			0.83		0.54

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. P-values reported are from a t-test of equality of means.
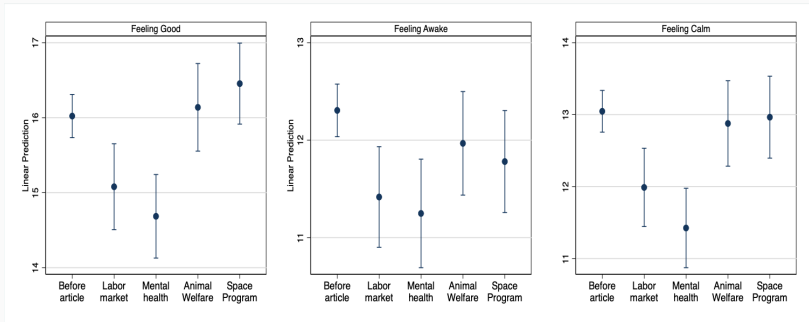
Includes pre-registered baseline controls: Gender, age, field of study, year of study, number of correct matrices in first round, scholarship recipient. 95% Confidence intervals.

Dependent variable: Cognitive performance		
	(1)	(2)
Labor Market	-0.246	-0.226
	(0.202)	(0.204)
Mental Health	-0.228	-0.206
	(0.205)	(0.203)
Threshold	-0.118	-0.0917
	(0.160)	(0.162)
Labor Market X Threshold	0.696**	0.617**
	(0.297)	(0.298)
Mental Health X Threshold	0.190	0.137
	(0.301)	(0.301)
Observations	1503	1503
Control Mean	6.97	6.97
Baseline Controls	yes	yes
Extended controls	no	yes

Note: Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variable is the number of correct matrices. Baseline controls includes: gender, age, field of study, year of study, number of correct matrices in first round, scholarship recipient. Extended controls includes: day of survey, week of survey, time of survey, level of fatigue, whether they are French native speaker, whether they were born abroad, whether both their parents were born abroad, color blindness.

Data: Attrition

| | Dependent variable: Attrition | | |
| | (1) | (2) | (3) |
	Piece-rate	Threshold	Interaction
Labor Market	0.0142	0.00309	0.0152
	(0.0154)	(0.0135)	(0.0154)
Mental Health	-0.0128	-0.00338	-0.0121
	(0.0104)	(0.0125)	(0.0103)
Threshold			-0.00290
			(0.0102)
Labor Market X Threshold			-0.0121
			(0.0207)
Mental Health X Threshold			0.00863
			(0.0162)
Observations	797	739	1536
F-statistic	1.105	1.255	1.494

Note: Rate of attrition 3.8% . Includes pre-registered baseline controls: Gender, age, field of study, year of study, number of correct matrices in first round, scholarship recipient. Includes all participants who finish the task. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Selective attrition

Variable	Mean	Labor Market vs Controls		Mental Health vs Controls	
		Diff	P-values	Diff	P-values
Woman	0.61	-0.06	0.69	0.04	0.87
Scholarship	0.39	-0.03	0.86	-0.07	0.75
Age	21.78	0.00	1.00	-2.00	0.09*
First Round Matrices	1.35	0.43	0.24	-0.02	0.97
- Level of study:					
Undergrad	0.81	0.12	0.34	0.26	0.17
Master and Engineers	0.15	-0.13	0.25	-0.22	0.21
PhD	0.04	0.01	0.86	-0.04	0.64
- Level of study:					
Arts and Languages	0.06	-0.03	0.71	-0.07	0.51
Health Sciences	0.06	0.06	0.42	-0.04	0.64
Law, Economics, Management	0.30	0.06	0.62	0.44	0.03**
Humanities and Social Sciences	0.19	-0.03	0.79	-0.22	0.21
Science and Technology	0.41	-0.06	0.67	-0.11	0.63
Observations	54				
Joint orthogonality test			0.96		0.68

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. P-values reported are from a t-test of equality of means.
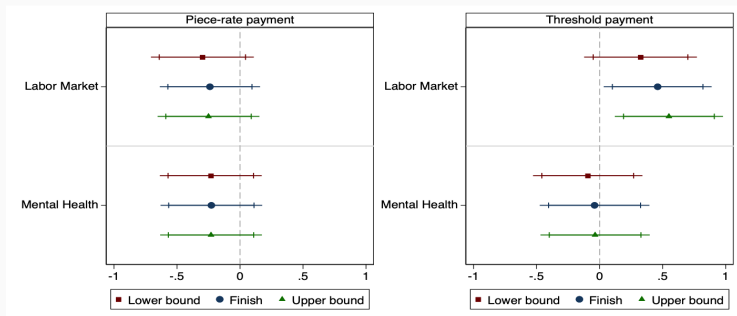
Note: Includes pre-registered baseline controls: Gender, age, field of study, year of study, number of correct matrices in first round, scholarship recipient. Includes all participants who finish the task.

	Dependent variable: Mental health score		
	(1) All	(2) Piece-rate	(3) Threshold
Q25			
Labor Market	0.000	0.794**	-0.485
	(0.432)	(0.396)	(0.507)
Mental Health	0.300	0.688	-0.138
	(0.395)	(0.473)	(0.593)
Q50			
Labor Market	-0.245	0.635	-0.419
	(0.492)	(0.981)	(0.661)
Mental Health	0.532	0.476	0.356
	(0.512)	(0.685)	(1.054)
Q75			
Labor Market	0.655	1.370**	-0.780
	(0.645)	(0.633)	(1.011)
Mental Health	1.794***	2.387***	-0.092
	(0.647)	(0.779)	(1.193)
Observations	1489	767	722
Control Mean	10.74	10.38	11.12

Note: Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. All specifications include baseline controls: gender, age, field of study, year of study, number of correct matrices in first round, scholarship recipient.

Treatment effect by corrected mental health score

	Dependent variable: Cognitive performance			
	Piece-rate payment		Threshold payment	
	Above median	Below median	Above median	Below median
	(1)	(2)	(3)	(4)
Labor Market	-0.354	-0.0557	0.501	0.464
	(0.276)	(0.299)	(0.323)	(0.302)
Mental Health	-0.719**	0.216	-0.367	0.305
	(0.295)	(0.293)	(0.333)	(0.301)
Observations	398	381	352	372
Control Mean	7.10	6.83	6.90	6.39

Note: Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. All specifications include baseline controls: gender, age, field of study, year of study, number of correct matrices in first round, scholarship recipient. To account for the negative treatment effect on the Mental Health score, we regressed the treatment topic, payment treatment, and their interaction on the mental health score. Then, we retrieved the residuals, which will contain everything that is not explained by the treatment effects. Afterward, we split the sample into two groups (below and above the median) using the residuals as the new mental health score.

Heterogeneity: Cognitive performance - Piece rate payment

	Gender		Scholarship		Level of study		Labor Market	
	Woman	Man	With	Without	1st year	Not 1st year	Close	Not close
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Labor Market	-0.170	-0.339	-0.219	-0.205	-0.014	-0.360	0.246	-0.240
	(0.474)	(0.386)	(0.466)	(0.457)	(0.968)	(0.155)	(0.666)	(0.268)
	[0.872]	[0.872]	[0.803]	[0.803]	[0.969]	[0.473]	[0.902]	[0.687]
Mental Health	-0.195	-0.239	0.243	-0.634	-0.150	-0.254	-0.255	-0.123
	(0.447)	(0.493)	(0.405)	(0.028)**	(0.672)	(0.315)	(0.662)	(0.582)
	[0.872]	[0.872]	[0.803]	[0.096]*	[0.897]	[0.685]	[0.902]	[0.902]
Observations	513	266	349	430	257	522	114	665
Control Mean	6.83	6.71	6.50	7.03	6.54	6.91	7.20	6.72

Note: P-values in parentheses. Robust standard errors. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Romano and Wolf (2005) adjusted P-values for multiple hypothesis testing in square brackets with 1,000 replications. The dependent variable is the number of correct matrices. All specifications include baseline controls: gender, age, field of study, year of study, number of correct matrices in first round, scholarship recipient. ▶ Back

	Field		Depression		Anxiety		Emotion qnt	
	Health Sciences	Others	Above median	Below median	Above median	Below median	After	Before
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Labor Market	-0.888	-0.165	-0.330	-0.074	-0.339	-0.190	-0.418	-0.070
	(0.057)*	(0.451)	(0.237)	(0.801)	(0.264)	(0.479)	(0.188)	(0.785)
	[0.165]	[0.682]	[0.520]	[0.940]	[0.590]	[0.713]	[0.456]	[0.944]
Mental Health	-1.252	-0.106	-0.599	0.096	-0.497	-0.069	-0.463	0.020
	(0.017)**	(0.635)	(0.038)**	(0.749)	(0.149)	(0.791)	(0.136)	(0.941)
	[0.083]*	[0.682]	[0.136]	[0.940]	[0.455]	[0.782]	[0.432]	[0.944]
Observations	87	692	379	400	309	470	372	407
Control Mean	7.47	6.71	6.72	6.86	6.47	7.00	6.75	6.83

Note: P-values in parentheses. Robust standard errors. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Romano and Wolf (2005) adjusted P-values for multiple hypothesis testing in square brackets with 1,000 replications. The dependent variable is the number of correct matrices. All specifications include baseline controls: gender, age, field of study, year of study, number of correct matrices in first round, scholarship recipient. ▶ Back

	Gender		Scholarship		Level of study		Labor Market	
	Woman	Man	With	Without	1st year	Not 1st year	Close	Not close
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Labor Market	0.602	0.192	0.459	0.488	0.364	0.539	0.189	0.521
	(0.021)**	(0.637)	(0.172)	(0.095)*	(0.341)	(0.042)**	(0.715)	(0.030)**
	[0.094]*	[0.943]	[0.440]	[0.334]	[0.705]	[0.153]	[0.973]	[0.135]
Mental Health	-0.041	-0.036	-0.234	0.114	-0.153	0.011	-0.074	-0.032
	(0.879)	(0.930)	(0.495)	(0.697)	(0.666)	(0.968)	(0.908)	(0.894)
	[0.981]	[0.981]	[0.771]	[0.771]	[0.877]	[0.972]	[0.985]	[0.985]
Observations	486	238	321	403	251	473	96	628
Control Mean	6.92	6.47	6.41	7.07	6.57	6.88	7.21	6.71

Note: P-values in parentheses. Robust standard errors. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Romano and Wolf (2005) adjusted P-values for multiple hypothesis testing in square brackets with 1,000 replications. The dependent variable is the number of correct matrices. All specifications include baseline controls: gender, age, field of study, year of study, number of correct matrices in first round, scholarship recipient. ▸ Back

Heterogeneity: Cognitive performance - Threshold payment

	Field		Depression		Anxiety		Emotion qnt	
	Health Sciences	Others	Above median	Below median	Above median	Below median	After	Before
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Labor Market	1.411	0.375	0.498	0.476	0.564	0.372	0.362	0.534
	(0.063)**	(0.099)*	(0.145)	(0.099)*	(0.086)*	(0.187)	(0.248)	(0.081)*
	[0.242]	[0.282]	[0.352]	[0.342]	[0.304]	[0.452]	[0.569]	[0.274]
Mental Health	0.165	-0.060	-0.368	0.303	-0.373	0.194	-0.138	0.115
	(0.839)	(0.795)	(0.271)	(0.314)	(0.318)	(0.482)	(0.660)	(0.721)
	[0.945]	[0.945]	[0.436]	[0.436]	[0.508]	[0.508]	[0.867]	[0.867]
Observations	74	650	345	379	307	417	365	359
Control Mean	6.99	6.75	6.89	6.67	6.89	6.70	6.88	6.67

Note: P-values in parentheses. Robust standard errors. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Romano and Wolf (2005) adjusted P-values for multiple hypothesis testing in square brackets with 1,000 replications. The dependent variable is the number of correct matrices. All specifications include baseline controls: gender, age, field of study, year of study, number of correct matrices in first round, scholarship recipient. ▸ Back
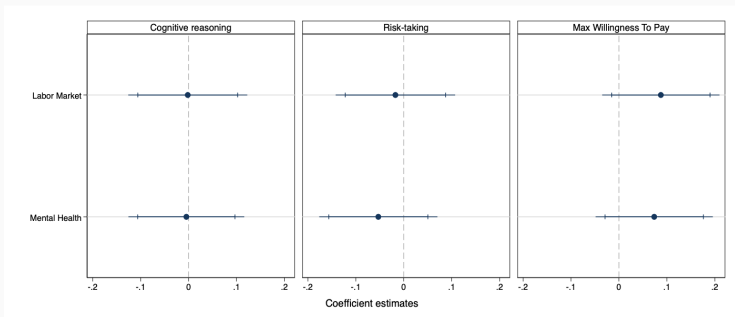
	Estimate (1)	Std. Error (2)	P-value (3)	Adj. P-value (4)
Quartile 2 - Quartile 1	0.188	0.760	0.805	0.806
Quartile 3 - Quartile 1	0.634	0.717	0.377	0.590
Quartile 4 - Quartile 1	1.461	0.679	0.032**	0.080*

This table reports a difference-in-means estimator, where we test if the predictor for quartile 2,3 and 4 is statistically different from quartile 1. Column (4) reports Romano and Wolf (2005) adjusted P-values for multiple hypothesis testing with 1,000 replications.
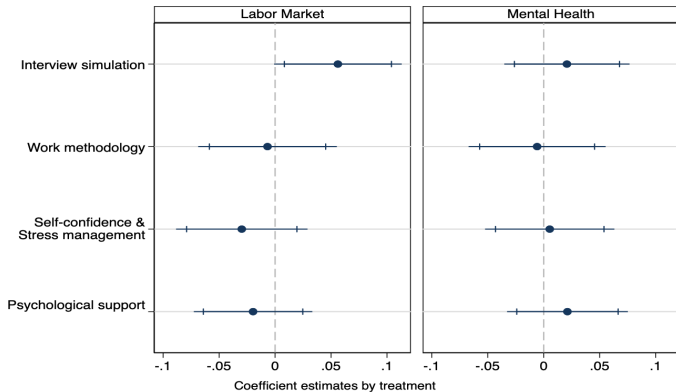
Note: Includes pre-registered baseline controls: Gender, age, field of study, year of study, number of correct matrices in first round, scholarship recipient.

Note: Includes pre-registered baseline controls: Gender, age, field of study, year of study, number of correct matrices in first round, scholarship recipient.