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Moral progress, knowledge and error: Do people believe in moral objectivity?

Thomas Pölzler [iD][a], Lieuwe Zijlstra[b] and Jacob Dijkstra[c]

[a]Department of Philosophy, University of Graz, Graz, Austria; [b]Department of Philosophy, University of Groningen, Groningen, Netherlands; [c]Department of Sociology, University of Groningen, Groningen, Netherlands

ABSTRACT

A prevalent assumption in metaethics is that people believe in moral objectivity. If this assumption were true then people should believe in the possibility of objective moral progress, objective moral knowledge, and objective moral error. We developed surveys to investigate whether these predictions hold. Our results suggest that, neither abstractly nor concretely, people dominantly believe in the possibility of objective moral progress, knowledge and error. They attribute less objectivity to these phenomena than in the case of science and no more, or only slightly more, than in the cases of social conventions and personal preferences. This finding was obtained for a regular sample as well as for a sample of people who are particularly likely to be reflective and informed (philosophers and philosophy students). Our paper hence contributes to recent empirical challenges to the thesis that people believe in moral objectivity.

1. Introduction

A central debate in metaethics concerns the existence of objective moral truths. In order for moral statements to be objectively true or false, they would have to be 'mind-independent'; i.e., they would have to be true or false independently from the perspective or the beliefs of specific individuals or cultures. For example, in order for the statement 'abortion is wrong' to be objectively true it would have to be true even if you as an individual or most members of your culture believed that abortion is in fact not wrong.[1]

Some philosophers affirm the existence of objective moral truths (Boyd, 1988; Brink, 1989; Smith, 1994), while others deny it (Ayer, 1936; Blackburn, 1993; Harman, 1996; Mackie, 1977). Most philosophers agree, however, that ordinary people (i.e., non-experts, lay people) are moral objectivists – at least in the sense that this view is presupposed by their moral thought or practice; or at least if they were sufficiently reflective and informed (e.g.,

CONTACT Thomas Pölzler ✉ thomas.poelzler@uni-graz.at 💻 Department of Philosophy, University of Graz Attemsgasse 25/II, Graz 8010, Austria

Brink, 1989; Dancy, 1986; Enoch, 2017a, 2017b; Mackie, 1977; McNaughton, 1988). This is the assumption of folk moral objectivism (FMO).

It is widely believed that metaethical theories should accommodate FMO. Most importantly, philosophers have appealed to this assumption in what might be called the 'presumptive argument' for moral objectivism. According to this argument, the fact that people believe that morality is objective generates a *prima facie* reason to believe that morality is indeed objective (e.g., Brink, 1989; Dancy, 1986; Enoch, 2017a, 2017b; McNaughton, 1988).

A particularly influential formulation of this argument can be found in Brink:

> In many areas of dispute between realism and antirealism, realism is the natural metaphysical position. [. . .] So too, I think, in ethics. [. . .] if this claim about the realist nature of moral inquiry is right, we have reason to accept moral realism that can be overturned only if there are powerful objections to moral realism. (Brink, 1989, pp. 23–24)[2]

The presumptive argument has been subject to a number of philosophical objections (see Loeb, 2007; Pölzler et al., 2020; Pölzler, 2018). In this paper, in contrast, we will mainly address the argument's empirical merits. That is, we will investigate whether FMO is true: whether people really believe in moral objectivity.

According to Brink (1989, pp. 23–26, 29, 31), as well as to other proponents of the presumptive argument, at least five features of ordinary moral thought and practice show that ordinary people take morality to be objective and are hence indicators of FMO:

(1) INDEPENDENCE: People believe that moral sentences are true or false independently of anyone's subjective reactions or attitudes.
(2) EXCLUSION: People believe that only one party in a moral disagreement can be correct.
(3) PROGRESS: People believe that it is possible to make moral progress.
(4) KNOWLEDGE: People believe that it is possible to have moral knowledge.
(5) ERROR: People believe that it is possible to make moral mistakes.

INDEPENDENCE and EXCLUSION have been extensively investigated in recent moral psychology research (e.g., Beebe & Sackris, 2016; Beebe, 2014; Davis, 2020; Goodwin & Darley, 2008, 2012; Heiphetz & Young, 2017; Nichols, 2004; Pölzler & Wright, 2020; Sarkissian et al., 2011; Waynrib et al. 2004; Wright et al., 2013, 2014; Wright, 2018). The results of these studies cast some initial doubt on FMO. They suggest that while ordinary

people do believe in the objectivity of some moral statements, they are non-objectivists about others, perhaps even about the majority.[3]

However, some philosophers have raised concerns about the extant studies' construct validity (Beebe, 2015; Bush & Moss, 2020; Pölzler, 2018, 2022).[4] They have criticized, for example, that some of these studies' results may be explained by beliefs about moral universalism or about first-order ethical issues or epistemic issues (rather than by beliefs about moral objectivity); or that the studies' answer options did not reflect certain variants of non-objectivism; or that their instructions or structure might have biased participants in favor of objectivism or non-objectivism.

Moreover, ordinary people's (philosophical) beliefs are not always fully consistent (Young & Phillips, 2011). It is possible that FMO fails to be well-reflected in some features of ordinary moral thought and practice – such as with regard to INDEPENDENCE and EXCLUSION – but still shows clearly in others, such as PROGRESS, KNOWLEDGE and ERROR. We therefore believe that it would also be valuable to investigate PROGRESS, KNOWLEDGE, and ERROR.

If we obtain empirical evidence for FMO then this will support the idea that FMO should be accommodated by metaethical theories. In contrast, if we obtain evidence that is in tension with FMO, metaethicists may want to reconsider to what extent their theories should accommodate FMO. Either way, by investigating PROGRESS, KNOWLEDGE and ERROR we could potentially benefit metaethical theorizing; we could help philosophers to assess the plausibility of metaethical claims and theories.

The question that we ask, then, is: Do people believe in the possibility of moral progress, knowledge and error? More specifically, do they believe in moral progress, knowledge and error in a way that corresponds to FMO?[5] In the first section we will further clarify this question. Then we report two survey experiments that attempt to begin to shed some light on it, namely an experiment on a regular sample and an experiment on a sample of people who are particularly likely to be reflective and informed (philosophers and philosophy students). Participants in neither of these studies believed in moral progress, knowledge and error in a way that corresponds to FMO.

2. Clarifications

In this section we will further clarify PROGRESS, KNOWLEDGE and ERROR. In particular, we will explain in which sense these hypotheses would have to be true in order for them to support FMO (as assumed by proponents of the presumptive argument).

To begin with, there is an important difference between *the possibility* of moral progress, knowledge, and error versus actually *achieving* moral progress, *obtaining* moral knowledge, and *making* moral errors. FMO

does not require that people believe that moral progress has been achieved, or that moral knowledge has been obtained, or that moral mistakes have actually been made. For example, suppose that humanity, or particular societies or individuals, have not made (much) progress on a moral question because of widespread cognitive biases or longstanding unquestioned traditions. In this case it could still be claimed that there is an objectively correct answer to this moral question. People have just failed to grasp this answer. In our studies we will therefore use measurement instruments that exclusively aim at testing whether people believe that moral progress, knowledge and error are *possible* (e.g., Brink, 1989).

Some philosophers (e.g., Brink, 1989) have argued that the fact that people (under certain circumstances) believe in the possibility of moral progress, knowledge and error suggests that FMO is true. However, this need not be the case. People could believe that moral progress, knowledge, or error is possible but not in an objective way. In other words, people could believe that there is the possibility of progress, knowledge and error in a subjectivist sense, i.e., progress, knowledge, and error are possible in that they are constituted by the perspectives or the beliefs of specific individuals or cultures.

As an example, consider moral error. People who believe that one can err about a particular moral question might only mean that one can fail to grasp one's own moral beliefs or the beliefs of one's own culture about that question.[6] They might not mean that there is some objectively correct answer that any individual or culture can fail to grasp. In this paper we are interested in whether people believe in moral progress, knowledge and error in a sense that corresponds to FMO. Hence, we will specifically investigate whether people believe in these things in an *objective* sense (as opposed to a subjective sense or not at all).

3. Study 1

As said, we conducted two studies to investigate whether people believe in objective moral progress, knowledge and error in the sense just explained. Our first study focuses on lay people.

Existing research suggests that with regard to a number of philosophical questions lay people tend to respond differently to abstract versus concrete cases (e.g., Nichols & Knobe, 2007; Sinnott-Armstrong, 2008). For this reason, we developed a design in which participants can indicate whether or not they think that moral progress, knowledge and error are possible both abstractly (with regard to morality in general), and concretely (with regard to particular moral questions).[7] However, we have no expectations about possible differences between abstract and concrete cases and hence, no hypotheses about a possible difference. Instead, we are investigating people's responses to the domains of progress, knowledge and error.

More specifically, we provided participants with the following answer options: moral progress, knowledge and error are (1) objectively possible, (2) subjectively possible or (3) not possible at all. As explained in the previous section, only the first of these options is entailed by FMO. Options two and three are inconsistent with it.

We hypothesize that FMO is true and that this will be particularly reflected in how people, along the dimensions of progress, knowledge, and error, respond to morality versus to other domains. Moral statements will elicit similar responses as scientific statements (which are likely thought of as objective) but not as statements about social conventions and personal preferences (which are likely thought of as nonobjective).[8] In statistical terms, our null hypothesis is that there are no differences, along the dimensions of progress, knowledge, and error, in how people treat moral statements versus other kinds of statements. Our alternative hypothesis is that there are differences.

3.1. Method

3.1.1. Participants

We recruited 453 participants via the online service Amazon Mechanical Turk. They received $0.80 for their time. To prevent that some participants do not take the cognitive effort needed to provide valid responses we included several attention checks and measured participants' survey completion times (see Huang et al., 2012; Pölzler 2022, forthcoming). 26 participants were excluded from statistical analyses because they failed with regard to at least one attention check.[9] 18 participants were excluded because they finished the survey very fast.[10] Analyses were conducted on the remaining 409 participants of whom 216 were assigned to the abstract version and 193 to the concrete version.

Of the participants taking the abstract version 117 self-identified as male and 99 as female; mean age in the abstract version was 35.86 years (sd = 10.39). Of the participants taking the concrete version 109 self-identified as male, 82 as female, and 2 as 'other'; mean age in the concrete version was 36.95 years (sd = 11.19). 398 of 409 respondents were Americans and no other nationality appeared more than once among our respondents.

3.1.2. Materials and procedure

Participants were randomly distributed to an abstract version of the study or to a concrete version, making version a between-subjects factor. In each version participants were presented with a number of statements. Each statement belonged to one of four domains (morality, social conventions, personal preferences, and science) and was assessed along each of three

dimensions (progress, knowledge and error). Dimension and domain were thus within-subjects factors.

The abstract version for each domain consisted of the evaluation of a single abstract statement – addressing morality, social conventions, personal preferences and science in general – along all three dimensions. This implies a total of 12 evaluations. The concrete version involved three concrete statements for each of the social conventions, personal preferences, and science domains, and nine statements for the morality domain. This yielded a total of 18 concrete statements that were each evaluated on all three dimensions, for a total of 54 evaluations. Each version (abstract and concrete) and each domain (morality, social conventions, personal preferences, and science) were randomized. The design is summarized in Table 1 below.

3.2. Measures

To determine whether a participant affirms the possibility of objective moral progress, objective moral knowledge and objective moral error, we used the following measures (with 'X' being either filled by one of our abstract or concrete statements).

PROGRESS:
Does it seem to you that, at least over long periods of time, progress can be or has been made with regard to the question of whether X (i.e., answers to this question cannot only change but become better)?

(1) There can be or has been progress in the sense of (coming closer to) discovering the objective truth about this question.
(2) There can be or has been progress but only from the perspective of particular cultures or individuals.
(3) There cannot be progress.

Table 1. Number of evaluations per version (abstract v. concrete) X dimension (progress, knowledge, error) X domain (morality, social conventions, personal preferences, science) combination.

| | | Dimension | | | | | |
| | | Progress | | Knowledge | | Error | |
Version	➜	Abstract	Concrete	Abstract	Concrete	Abstract	Concrete
Domain	morality	1	9	1	9	1	9
	conventions	1	3	1	3	1	3
	preferences	1	3	1	3	1	3
	science	1	3	1	3	1	3

In the abstract version, four statements were each evaluated along the three dimensions; in the concrete version, 18 statements were each evaluated along the three dimensions.

KNOWLEDGE:

Does it seem to you that the question of whether X is such that, under favorable circumstances, a person can know the answer to this question (i.e., can have a justified and true belief about it)?

(1) It is possible to acquire such knowledge by investigating the objective truth about this question.
(2) It is possible to acquire such knowledge but only by investigating one's culture's or one's own beliefs about this question.
(3) It is not possible to acquire knowledge about this question.

ERROR:

Does it seem to you that the question of whether X is such that, at least under unfavorable circumstances, a person can err about X (i.e., can give a false answer to it)?

(1) It is possible to make such an error in the sense of failing to grasp the objective truth about this question.
(2) It is possible to make such an error but only in the sense of failing to grasp one's culture's or one's own beliefs about this question.
(3) It is not possible to make an error about this question.

We interpreted (1) answers as indicative of FMO and (2) and (3) answers as indicative of responses that are in tension with FMO. Our hypotheses entail that our participants would predominantly be drawn toward (1) answers, and that the results for moral statements would be similar to those for scientific statements but not to those for statements about social conventions and personal preferences.

3.2.1. Statements

Although our interest is with the moral domain, statements from non-moral domains were included as well. The main reason for doing so was to provide a benchmark against which to assess whether or not moral statements are interpreted in an objectivist sense. We assume that people will be drawn toward objectivity for scientific statements and toward non-objectivity for the statements about conventions and preferences. Another reason for including non-moral statements was that the differences between these domains would prevent participants from answering all tasks in the same way. That is, the comparison of statements from different kinds of domains may increase people's ability to assess its metaethical grounding. Finally, existing empirical results (Pölzler & Wright, 2020; Wright et al., 2013) show that people distinguish between moral and non-moral statements in different ways. We will address this phenomenon in more detail below.

As to the moral statements in particular, previous research on FMO suggests that the content of these statements significantly influences attributions of objectivity. For example, participants indicated more objectivist beliefs about a moral statement the more widely they thought this statement was accepted by other members of their society (Beebe, 2014; Goodwin & Darley, 2008, 2012; Wright et al., 2014), if the statement was grounded in concerns of harm and fairness rather than in concerns of authority, loyalty and purity (Davis, 2020), and if the statement was formulated negatively (e.g., 'wrong') instead of positively (e.g., 'right') (Beebe, 2014; Goodwin and Darley 2010, Goodwin & Darley, 2012). To achieve an adequate representation of beliefs about moral objectivity we therefore varied the content of our moral statements along these and others lines.

Here are the statements from the concrete task (organized by domain) that we used, some of which were taken from or inspired by Goodwin and Darley (2008), Haidt et al. (1993), and Pölzler and Wright (2020).

MORALITY
Abortion is morally permissible.
Physical punishment is morally wrong.
It is good to do unto others as you would have them do onto you.
A country with the death penalty is morally worse than a country without.
Eating factory-farmed meat is morally bad.
Siblings ought not to kiss each other on the mouth passionately.
Selling children on the internet is morally wrong.
Cleaning one's bathroom with the American flag is morally impermissible.
Helping terminally ill patients end their lives is morally permissible.

SOCIAL CONVENTIONS
Wearing pajamas and bath robes to a seminar meeting is wrong behavior.
One ought not speak with one's mouth full.
Talking loudly and constantly to the person next to you during a lecture is a permissible action.

PERSONAL PREFERENCES
Getting tattoos and/or body piercings is okay.
Shakespeare is a better writer than is Dan Brown (author of The Da Vinci Code).
Classical music is the best kind of music.

SCIENCE
The earth is flat.
Boston (Massachusetts) is farther north than Miami (Florida).
The chemical formula for water is H_2O.

After completing all tasks described above, participants were again presented with the list of our 18 concrete statements and were presented with the following request: 'Below you find a number of statements. For each of these statements please indicate whether you think that it is primarily about morality, social conventions, personal preferences or scientific facts.' This task allowed us to address the potential objection that participants' moral progress, knowledge and error responses are not explained by their metaethical belief about moral objectivity, but by their distinguishing moral from non-moral statements differently from how we did (Wright et al., 2013). For example, some participants might not have regarded our statements about authority, loyalty and purity as moral, but might have instead regarded a statement such as 'Talking loudly and constantly to the person next to you during a lecture' as moral.

3.3. Results

3.3.1. Statistical hypotheses and analytical strategy

Within each dimension (progress, knowledge, and error) we compare answers to statements from the morality domain to answers from statements to the other domains. Moreover, data from the abstract and concrete tasks are analyzed separately. Referring to Table 1 above, this implies that analyses are performed down each of the 6 columns, separately. The first two columns pertain to the abstract and concrete versions of measuring moral progress, which we will refer to as Hypothesis 1. The third and fourth columns pertain to the abstract and concrete versions of moral knowledge, which we will refer to as Hypothesis 2. Finally, the fifth and sixth columns pertain to the abstract and concrete versions of moral error, which will be referred to as Hypothesis 3.

Table 2. Overall percentages of 'objective' answers to statements, by version (abstract v. concrete) X dimension (progress, knowledge, error) X domain (morality, social conventions, personal preferences, science) combination.

| | | Dimension | | | | | |
| | | Progress | | Knowledge | | Error | |
Version	→	Abstract	Concrete	Abstract	Concrete	Abstract	Concrete
Domain	Morality	46.76[a]	33.79[c]	48.15[a]	32.53[c]	45.37[a]	27.58[c]
	Conventions	47.69[a]	29.53[b]	54.17[a]	33.33[b]	51.39[a]	28.15[b]
	Preferences	49.54[a]	25.04[b]	50.46[a]	22.80[b]	43.06[a]	22.80[b]
	Science	84.26[a]	53.71[b]	83.33[a]	68.39[b]	78.24[a]	46.29[b]

[a]based on 1 statement per participant; [b] based on 3 statements per participant; [c] based on 9 statements per participant; N = 216 participants in the abstract version and N = 193 participants in the concrete version.

For each statement participants indicated whether they believe objective progress, knowledge or error to be possible (1) or not (2 or 3). For testing the hypotheses, we dichotomize these answer categories into 'objective' (1) and 'not objective' (2 or 3). We employed a within-subjects design and observations (evaluations of statements) are therefore nested in participants, leading to dependent observations (e.g., Gelman and Hill 2007; Snijders and Bosker 2011). We account for this dependence by estimating multilevel logistic regression models with observations nested in individuals, using HMC sampling implemented in Stan language run from R (Gelman et al., 2014; McElrath, 2020; Lunn et al. 2009).

3.3.2. Descriptives

Table 2 below presents the percentages of 'objective' answers for all statements, broken down by versions, dimensions, and domains.

Table 2 reveals a very consistent pattern in the data, seemingly in tension with FMO. In both abstract and concrete tasks, and along all three dimensions (progress, knowledge, and error), scientific statements are consistently evaluated in a more objectivist way than statements from the other three domains. Importantly, the evaluation of moral statements does not seem to differ from the evaluation of statements from the conventions and preference domains.

To formally test the hypotheses, we estimate multilevel logistic regressions using HMC sampling in Stan language. Evaluations of statements (level 1) are nested in participants (level 2). The response variable in all analyses is the logarithm of the odds of evaluating a statement with the answer 'objective'. The model equation has a random term (intercept) for each participant. Uninformative priors on the probability scale are used for all (hyper-)parameters. We test the hypotheses by drawing 10,000 samples from the posterior distribution of the parameters and then computing contrasts between the estimated parameter for the Morality domain and each of the other three domains. We report the means and standard deviations of these contrasts in the text, and also provide the 'Bayesian' p-values (Bayes-p): the posterior probability that the contrast is different from zero.

3.3.3. Testing Hypothesis 1: Moral progress

For both the abstract and the concrete versions, we estimate two models: models I and III without control variables, and models II and IV with gender and age as control variables. We evaluate the hypotheses based on the model with controls. For the abstract version, Model II strongly refutes the first hypothesis: moral statements are evaluated in a significantly *less* objectivist manner than are scientific statements (mean contrast = −2.06, sd =.25, $p < .0001$)[12], and there is no statistical difference in how moral statements are treated compared to statements about personal preferences (mean

Table 3. Results of multilevel logistic regressions with log odds of "possibility of progress" as response variable[11].

Coefs (sd)	Abstract		Concrete	
	Model I	Model II	Model III	Model IV
Morality	−0.16 (0.16)	−0.39 (0.42)	−0.80 (0.10)	−0.19 (0.40)
Science	1.89 (0.21)	1.67 (0.44)	0.20 (0.12)	0.81 (0.40)
Preferences	−0.03 (0.16)	−0.26 (0.42)	−1.30 (0.13)	−0.69 (0.40)
Conventions	−0.11 (0.16)	−0.35 (0.42)	−1.03 (0.13)	−0.42 (0.40)
Male		0.36 (0.43)		−0.33 (0.41)
Female		0.33 (0.44)		−0.35 (0.41)
Other				0.20 (0.69)
Age		−0.01 (0.01)		−0.02 (0.01)
Level-2 standard deviation	0.96 (0.15)	0.97 (0.15)	1.08 (0.08)	1.07 (0.08)

contrast = −.13, sd =.21, p = .27) and statements about social conventions (mean contrast = −.04, se =.21, p = 0.42). For the concrete version, Model IV provides a more nuanced picture. Here too, moral statements are evaluated in a significantly less objectivist manner than scientific statements (mean contrast = −1.00, sd =.11, p < .001). However, contrary to the abstract version, moral statements are evaluated in a more objectivist manner than statements about personal preferences (mean contrast =.51, sd =.12, p < 0.001) and statements about social conventions (mean contrast =.24, sd =.11, p = 0.02). The full results of our analysis are shown in Table 3.

3.3.4. Testing Hypothesis 2: Moral knowledge

We estimate two models for both the abstract and concrete versions: models I and III without control variables, and models II and IV with gender and age as control variables. For the abstract version, Model II strongly refutes hypothesis 2: moral statements are again evaluated in a *less* objectivist manner than are scientific statements (mean contrast = −2.06, sd =.26, p

Table 4. Results of multilevel logistic regressions with log odds of "possibility of knowledge" as response variable.

Coefficients	Abstract		Concrete	
	Model I	Model II	Model III	Model IV
Morality	−0.10 (0.17)	−0.45 (0.44)	−0.86 (0.09)	−0.40 (0.40)
Science	1.93 (0.22)	1.61 (0.45)	0.93 (0.12)	1.38 (0.41)
Preferences	0.01 (0.17)	−0.33 (0.44)	−1.42 (0.13)	−0.97 (0.40)
Conventions	0.20 (0.17)	−0.14 (0.44)	−0.81 (0.12)	−0.36 (0.40)
Male		0.38 (0.45)		−0.51 (0.41)
Female		0.32 (0.46)		−0.27 (0.42)
Other				0.41 (0.67)
Age		0.00 (0.01)		0.00 (0.01)
Level-2 standard deviation	1.19 (0.16)	1.23 (0.16)	0.99 (0.08)	0.99 (0.08)

Hamiltonian Monte Carlo estimation in Stan, with 4 chains with 8000 iterations each; model has random effects for participants (not shown) with mean 0 and estimated level-2 standard deviation; Rhat <1.01 for all parameters; reported coefficients are estimated posterior means with estimated standard errors in brackets; 864 statement evaluations (level 1) nested in 216 participants (level 2) in the abstract models; 3474 statement evaluations (level 1) nested in 193 participants (level 2) in the concrete models.

< .001), and there is no difference with personal preferences (mean contrast = −.12, sd =.22, p = .29) or statements about social conventions (mean contrast = −.31, sd =.22, p = .08). Similar to the results on moral progress, the results for the concrete version in Model IV are slightly more nuanced. Moral statements are evaluated in a significantly less objectivist manner than are scientific statements (b = −1.79, sd =.12, p < .001). Contrary to the abstract version, moral statements are evaluated in a more objectivist manner than are statements about personal preferences (mean contrast =.57, sd =.12, p < . 001), while there is no difference with statements about social conventions (mean contrast = −.04, sd =.11, p = .34). The full results of our analysis are shown in Table 4.

3.3.5. Testing Hypothesis 3: Moral error

We once more estimate two models for both the abstract and concrete versions: models I and III without control variables, and models II and IV with gender and age as control variables. For the abstract version, Model II refutes hypothesis 3: moral statements are evaluated in a less objectivist manner than scientific statements (mean contrast = −1.79, sd =.25, p < .001), and there are again no differences with personal preferences (mean contrast =,12, sd =.21, p = .29) or statements about social conventions (mean contrast = −.30, sd =.21, p = .08). Again, the results for the concrete version in Model IV provide more nuance. Moral statements are evaluated in a significantly less objectivist manner than scientific statements (mean contrast = −.97, sd =.11, p < . 001). And again, contrary to the abstract version, moral statements are evaluated in a more objectivist manner than are statements about personal preferences (mean contrast =.29, sd =.12, p = .01), while once more there is no difference with statements about social conventions (mean contrast = −.03, sd =.12, p = .39). The full results of or analysis are shown in Table 5.

Table 5. Results of multilevel logistic regressions with log odds of "possibility of error" as response variable.

Coefficients	Abstract		Concrete	
	Model I	Model II	Model III	Model IV
Morality	−0.23 (0.17)	−0.57 (0.43)	−1.13 (0.09)	
Science	1.55 (0.20)	1.22 (0.44)	−0.16 (0.12)	
Preferences	−0.35 (0.17)	−0.69 (0.43)	−1.42 (0.13)	
Conventions	0.07 (0.17)	−0.27 (0.43)	−1.09 (0.12)	
Male		−0.26 (0.43)		
Female		−0.05 (0.44)		
Age		0.03 (0.01)		
Level-2 standard deviation	0.15 (0.16)	1.11 (0.15)	1.00 (0.08)	

Hamiltonian Monte Carlo estimation in Stan, with 4 chains with 8000 iterations each; model has random effects for participants (not shown) with mean 0 and estimated level-2 standard deviation; Rhat <1.01 for all parameters; reported coefficients are estimated posterior means with estimated standard errors in brackets; 864 statement evaluations (level 1) nested in 216 participants (level 2) in the abstract models; 3474 statement evaluations (level 1) nested in 193 participants (level 2) in the concrete models.

Table 6. Results of multilevel logistic regressions with log odds of "objective" as response variable; domains are based on participants' own categorizations of statements from the concrete version.

	Progress		Knowledge		Error	
Coefs.	Model I	Model II	Model III	Model IV	Model V	Model VI
Morality	−0.64 (0.11)	−0.04 (0.40)	−0.69 (0.10)	−0.23 (0.40)	−1.04 (0.11)	−0.28 (0.40)
Science	0.15 (0.12)	0.75 (0.40)	0.83 (0.12)	1.30 (0.40)	−0.18 (0.11)	0.58 (0.40)
Prefs.	−1.23 (0.12)	−0.63 (0.40)	−1.34 (0.12)	−0.88 (0.40)	−1.28 (0.12)	−0.52 (0.40)
Conv.	−1.13 (0.11)	−0.54 (0.40)	−1.06 (0.11)	−0.60 (0.40)	−1.34 (0.11)	−0.59 (0.40)
Male		−0.33 (0.41)		−0.57 (0.40)		−0.50 (0.41)
Female		−0.34 (0.42)		−0.30 (0.41)		−0.58 (0.41)
Other		0.24 (0.69)		0.43 (0.67)		0.29 (0.66)
Age		−0.02 (0.01)		0.00 (0.01)		−0.01 (0.01)
Level 2 standard deviation	1.07 (0.08)	1.07 (0.08)	1.01 (0.08)	1.01 (0.08)	0.99 (0.08)	0.98 (0.08)

Hamiltonian Monte Carlo estimation in Stan, with 4 chains with 8000 iterations each; model has random effects for participants (not shown) with mean 0 and estimated level-2 standard deviation; Rhat <1.01 for all parameters; reported coefficients are estimated posterior means with estimated standard errors in brackets; 3474 statement evaluations (level 1) nested in 193 participants (level 2).

3.3.6. Hypothesis tests with subjective categorizations

We also calculated models for moral progress, knowledge, and error, based on people's own categorizations of statements in the domains of science, morality, personal preferences, and social conventions. Those results are broadly similar to the results without subjective categorizations. Posterior contrasts show that in the progress dimension, moral statements are evaluated less objectively than scientific ones ($p < 0.001$), but more objectively than both preference statements ($p < 0.001$) and statements about conventions ($p < 0.001$). In the knowledge dimension this pattern is identical, with Bayes-p values of <0.001, <0.001 and 0.0001, respectively. Finally, in the error dimension the pattern recurs once more, with Bayes-p values of <0.001, 0.02, and 0.003, respectively. The full results of our analysis are shown in Table 6.

3.4. Discussion

In this study, we used a new methodology to investigate whether FMO is true, namely by testing whether people believe in the possibility of objective moral progress, knowledge, and error.

Our results show that people believe that science (abstractly) is, and scientific statements (concretely) are, a matter of objectivity. For progress, knowledge, and error, people treat morality significantly differently. For all the abstract questions, morality is believed to be on a par with personal preferences and conventions. With regard to the concrete statements, results are slightly more nuanced. People seem to believe that moral statements are less objective than scientific statements but more objective than statements about personal preferences or social

conventions. Still, taken together, the results obtained in study 1 clearly challenge FMO (similar to those obtained for INDEPENDENCE and EXCLUSION).

That said, proponents of FMO may disagree. One possible alternative explanation is as follows. When metaethicists claim that people regard morality as objective they do not mean this claim to apply unconditionally. They only mean that people regard morality as objective when they have engaged in some amount of reflection or are sufficiently informed. This so called 'expertise defense' against empirical challenges to philosophical claims has often been put forward on a general level (see, e.g., Kauppinen 2007; Ludwig, 2007, 2010; Williamson, 2007). With regard to FMO in particular, it may also be reflected in the following quotation by Brink:

> I do not claim that moral realism is a common belief. I am willing to admit that, about moral realism, common belief is silent, divided, or even antagonistic. My concern, however, is not with unreflective and untutored metaphysical or metaethical views. My appeal to commonsense moral thinking is not a prediction about the likely results of a Gallup poll on the issue of moral realism. Rather, my concern is with the philosophical implications or presuppositions of moral thought and practice.
>
> (Brink, 1989, p. 25)

By asking participants questions about moral progress, knowledge and error (rather than about moral objectivity directly) Study 1 addressed the philosophical implications or presuppositions of moral thought and practice. However, contrary to Brink's above statement, we did not ensure that the measured metaethical views were 'reflective and tutored'.

A focus on reflective and informed beliefs may also be indicated for methodological reasons. Even though we made every effort to keep our experimental materials as simple as possible they still involved at least one ambitious philosophically concept, namely the concept of 'objective moral truth.' A recent preliminary study by Bush and Moss (2020) suggests that ordinary people do not tend to interpret this notion in terms of independence from the beliefs of individuals or cultures.[13] In fact, almost half of the participants of this study associated moral objectivity with metaethical subjectivism or factual differences in moral beliefs, suggesting widespread confusion about the concept.

We are confident that, these results notwithstanding, many of our participants in Study 1 will have understood 'objective moral truth' in the intended sense (as mind-independence). This is because we contrasted our objectivist answer option with two non-objectivist ones which reveal the intended interpretation of 'objective moral truth'. For example, in the PROGRESS measure, making progress in the sense of coming closer to the objective moral truth was contrasted with making progress from the

perspective of particular cultures or individuals and with the denial of the possibility of any kind of progress.

Still, we cannot rule out that at least some participants of Study 1 misinterpreted our reference to objective moral truths (or some other parts of our materials). If participants were reflective and informed, this would likely further decrease the likelihood of such misinterpretations. Hence, there seems to be a need to obtain data about this particular kind of metaethical beliefs.

4. Study 2

One way of obtaining data about reflective and informed beliefs about FMO would be to have a sample of ordinary people and make them reflect on and inform them about the question of moral objectivity. For example, in other areas of experimental philosophy researchers have attempted to trigger reflective cognitive processes by asking for justifications of answers or by requiring a certain minimum time before giving an answer (Machery 2017); and at the beginning of tasks about moral objectivity Pölzler and Wright (2020) explained to their participants the metaethics/normative ethics and truth-apt/not truth-apt distinctions and tested their understanding of these distinctions.

We do not mean to discredit this strategy in any way (even though some versions of it clearly come with challenges, e.g., the challenge of not biasing participants in the process of tutoring; e.g., Pölzler, 2018). Here, however, we will pursue a different strategy. We will focus on a population who is disproportionately likely to reflect and who is disproportionately informed with regard to metaethics (or philosophy in general) from the beginning. This population are philosophers; or more precisely, professional philosophers and students in philosophy. They tend to score disproportionately high in reflective abilities (Livengood et al., 2010) and have disproportionately high experience with and understanding of philosophical concepts, distinctions, modes of reasoning, etc.[14]

This shift in our target population does not mean that we are now interested in the metaethical beliefs of experts. Study 2 is still meant to be about the thesis of *Folk* Moral Objectivism. We are only studying the beliefs of experts to find out what ordinary people would believe about morality's objectivity if they were more reflective and informed.

Needless to say, this method is as imperfect as those mentioned before. Critics might in particular object that professional philosophers and students in philosophy do not only differ from the folk in that their beliefs about moral objectivity are more reflective and informed; they also differ in many other respects. For example, philosophers and philosophy students tend to be more educated, more liberal, less religious, and so on. These

demographic differences could affect their metaethical beliefs, so that potential differences between these beliefs and those of ordinary people are not only or not even dominantly explained by higher degrees of reflectiveness and informedness.

We agree that this is possible. Philosophers and philosophy students are certainly not a perfect proxy for reflective and informed ordinary people. At present, however, the influence of demographic and personal factors on metaethical beliefs is hard to tell. Solid evidence only exists for a correlation with religious beliefs (e.g., Collier-Spruel et al., 2019; Sarkissian & Phelan, 2019; for discussion Pölzler 2022). We thus still hope that philosophers and philosophy students are at least to some extent representative of hypothetical reflective and informed ordinary people.

If this assumption turns out to be flawed then Study 2 can still be read as an attempt to gain data about how experts think about moral objectivity (even though, in this case, it does not fully answer to Brink's above objection against Study 1).

4.1. Method

4.1.1. Participants

We recruited 115 participants by sharing a Qualtrics link via e-mail to registrars, faculty staff and students at different philosophy faculties in The Netherlands, Germany, Austria, and the United States. The e-mail provided general information and a request to only fill out the survey if the receiver is a philosophy faculty member, philosophy researcher or lecturer (including PhD students), or philosophy bachelor or master student. We included the same attention checks as in study 1. 16 participants were excluded from statistical analyses because they failed with regard to at least one attention check. Analyses were conducted on the remaining 99 participants.

Of these 99 participants, 54 were assigned to the abstract version and 45 to the concrete version. Of the participants taking the abstract version 31 self-identified as male and 17 as female, and 1 as 'other', with 12 missing cases; mean age in the abstract version was 35.98 years (sd = 13.00, N = 49). Of the participants taking the concrete version 22 self-identified as male, 10 as female, and 1 as 'other'; mean age in the concrete version was 35.18 years (sd = 12.01, N = 33). Of our 99 respondents, 13 were Austrian, 12 were Croatian, 9 were Chinese, 8 were Dutch, 6 were German, and another 6 were American, all other nationalities occurred fewer than 5 times, and 17 respondents did not report their nationality.

4.1.2. Materials and procedure

As we have seen, proponents of FMO might argue that their thesis only applies to reflective and informed metaethical commitments. Nonetheless, they typically interpret this assumption as being about pre-theoretical commitments (e.g., Brink, 1989; McNaughton, 1988). In study 2 we hence included the following instruction: 'As a philosophy student or philosopher, you might be familiar with or committed to explicit philosophical theories about the matters addressed in this study. In answering our questions please do not reason from the perspective of those theories. This study targets the philosophical presuppositions of certain discourses, thoughts and practices. That is, we are interested in the commitments that guide you in ordinary circumstances.' Given that the participants were philosophers, we expected them to have the expertise to properly access and report their pre-theoretical commitments about moral objectivity in the right circumstances (which are provided in our experiment).

Apart from this change, the materials and procedures of study 2 were similar those of study 1.

4.2. Measures

Our measures of belief in the possibility of objective moral progress, objective moral knowledge and objective moral error were revised in two minor ways. First, we reformulated the second answer option so as it would reflect a broader range of beliefs about how morality might be dependent on mental states (as philosophers may hold more complex beliefs on this matter[15]). Second, we included a fourth answer option termed 'other', in combination with a mandatory text input box (as philosophers are more likely to think that their belief is not well represented by any of answer options one to three[16]). The measures for PROGRESS, KNOWLEDGE and ERROR hence looked as follows.

PROGRESS:
Does it seem to you that, at least over long periods of time, progress can be or has been made with regard to the question of whether X (i.e., answers to this question cannot only change but become better)?

(1) There can be or has been progress in the sense of (coming closer to) discovering the objective truth about this question.
(2) There can be or has been progress but only in a nonobjective sense; e.g., from the perspective of particular cultures or individuals.
(3) There cannot be progress.
(4) Other.

KNOWLEDGE:

Does it seem to you that the question of whether X is such that, under favorable circumstances, a person can know the answer to this question (i.e., can have a particular kind of justified and true belief about it)?

(1) It is possible to acquire such knowledge by investigating the objective truth about this question.
(2) It is possible to acquire such knowledge but only in a nonobjective sense; e.g., by investigating one's culture's or one's own beliefs, desires, feelings, etc. about this question.
(3) It is not possible to acquire knowledge about this question.
(4) Other.

ERROR:

Does it seem to you that the question of whether X is such that, at least under unfavorable circumstances, a person can err about the answer to this question (i.e., can give a false answer to it)?

(1) It is possible to make such an error in the sense of failing to grasp the objective truth about this question.
(2) It is possible to make such an error but only in a nonobjective sense, e.g., by failing to grasp one's culture's or one's own beliefs, desires, feelings, etc. about this question.
(3) It is not possible to make an error about this question.
(4) Other.

Again, we interpreted (1) answers as indicative of FMO and (2) and (3) answers as indicative of responses that are in tension with FMO.

4.2.1. Statements

Participants received the same statements as in study 1 and again were asked to indicate whether they think that these statements are primarily about morality, social conventions, personal preferences or scientific facts.

4.3. Results

4.3.1. Statistical hypotheses and analytical strategy

We adopted the same approach as in study 1. For each dimension (progress, knowledge, error), we compared participants' answers to statements from the morality domain to answers from statements to the other domains. The hypothesis that we tested is whether people's progress, knowledge and error responses in the morality domain are similar to their responses in the

science, preferences, and conventions domain. We tested people's responses both in the abstract and concrete as there may be a divergence between both.

4.3.2. Descriptives

Table 7 below presents the percentages of 'objective' answers for all statements, broken down by versions, dimensions, and domains.

The results suggest that scientific statements, both concretely and abstractly, are evaluated in a more objectivist way than statements from the other domains. The percentages of objectivist responses for morality are roughly comparable to the percentages in Study 1. Except for the Error domain in the abstract version (50.94%), less than half of the responses for morality are objectivist for each of the other domains in the abstract and concrete version. Consequently, visual inspection suggests that philosophers do not overwhelmingly believe that morality, either abstractly or concretely, concerns an objective matter – at least, not to the same degree as they perceive science to be a matter of objectivity. A visual inspection of the percentages for the domains of preferences and conventions, in comparison to Study 1, suggests that philosophers are even less inclined to perceive those domains as objective. Generally, it seems that most participants believe that science is a matter of objectivity and morality, preferences, and conventions are less so.[17]

To formally test the hypotheses, we estimate multilevel logistic regressions using HMC sampling in Stan language. Evaluations of statements (level 1) are nested in participants (level 2). The response variable in all analyses is the logarithm of the odds of evaluating a statement with the answer 'objective'. The model equation has a random term (intercept) for each participant. Uninformative priors are used for all (hyper-)parameters.

4.3.3. Testing Hypothesis 1: Moral progress for philosophers

For both the abstract and the concrete versions, we estimate two models: models I and III without control variables, and models II and IV with

Table 7. Overall percentages of 'objective' answers to statements, by version (abstract v. concrete) X dimension (progress, knowledge, error) X domain (morality, social conventions, personal preferences, science) combination.

		Dimension					
		Progress		Knowledge		Error	
Version	➜	Abstract	Concrete	Abstract	Concrete	Abstract	Concrete
Domain	Morality	45.28[a]	33.65[c]	41.51[a]	33.02[c]	50.94[a]	29.84[c]
	Conventions	26.42[a]	20.59[b]	33.96[a]	18.63[b]	39.62[a]	19.61[b]
	Preferences	28.85[a]	14.81[b]	28.85[a]	16.67[b]	32.96[a]	16.67[b]
	Science	76.92[a]	83.33[b]	80.77[a]	90.20[b]	86.54[a]	79.41[b]

[a]based on 1 statement per subject; [b] based on 3 statements per subject; [c] based on 9 statements per subject; N = 54 subjects in the abstract version and N = 45 subjects in the concrete version.

gender and age as control variables. We test the hypotheses based on the models with controls. For the abstract version, participants considered moral statements to be significantly less objective than scientific statements (mean contrast = −1.73, sd =.50, $p < .0001$). There is a marginal statistical difference in how moral statements were treated compared to statements about personal preferences (mean contrast = 0.78, sd =.49, $p = 0.054$) and statements about social conventions (mean contrast = 0.78, sd =.49, $p = 0.052$). For the concrete version, Model IV shows a much larger difference between science and morality. Moral statements are evaluated in a significantly less objectivist manner than scientific statements (mean contrast = −3.22, sd =.0.39, $p < .0001$). Similar to the abstract version, moral statements are evaluated in a more objectivist manner than statements about personal preferences (mean contrast = 1.50, sd =.38, $p < 0.0001$) and statements about social conventions (mean contrast = 0.91, sd =.34, $p = 0.003$). The full results of our analysis are shown in Table 8.

4.3.4. Testing Hypothesis 2: Moral knowledge for philosophers

We estimate two models for both the abstract and concrete versions: models I and III without control variables, and models II and IV with gender and age as control variables, using the latter to test our hypotheses. For the abstract version, Model II refutes hypothesis 2: moral statements are evaluated in a less objectivist manner than are scientific statements (mean contrast = −2.13, sd =.52, $p < .0001$), and there is no difference with personal preferences (mean contrast =.54, sd =.47, $p = 0.12$) or statements about social conventions (mean contrast =.22, sd =.46, $p = .31$). Similar to the results on moral progress, the results for the concrete version in Model IV are more nuanced. Moral statements are evaluated in a significantly less objectivist manner than are scientific statements (mean contrast = −4.13, sd

Table 8. Results of multilevel logistic regressions with log odds of "possibility of progress" as response variable.

Coefficients	Abstract		Concrete	
	Model I	Model II	Model III	Model IV
Morality	−0.30 (0.37)	−0.24 (0.54)	−0.88 (0.31)	−0.46 (0.50)
Science	1.39 (0.42)	1.50 (0.57)	2.32 (0.41)	2.76 (0.55)
Preferences	−1.06 (0.39)	−1.02 (0.55)	−2.33 (0.41)	−1.96 (0.54)
Conventions	−1.06 (0.39)	−1.02 (0.55)	−1.75 (0.39)	−1.36 (0.53)
Male		−0.31 (0.64)		−0.42 (0.72)
Female		−0.17 (0.62)		−0.38 (0.67)
Other		−0.30 (0.89)		−0.25 (0.91)
Age		0.00 (0.02)		−0.01 (0.02)
Level 2 standard deviation	1.41 (0.38)	1.51 (0.38)	1.78 (0.29)	1.86 (0.32)

Hamiltonian Monte Carlo run with 4 chains, each with 8000 iterations; Rhat <1.01 for all parameters; reported coefficients are estimated posterior means; estimated standard errors in brackets; 196 statement evaluations (level 1) nested in 49 participants (level 2) in the abstract models; 576 statement evaluations (level 1) nested in 32 participants (level 2).

Table 9. Results of multilevel logistic regressions with log odds of "possibility of knowledge" as response variable.

	Abstract		Concrete	
Coefficients	Model I	Model II	Model III	Model IV
Morality	−0.52 (0.36)	−0.64 (0.53)	−1.04 (0.33)	−0.72 (0.50)
Science	1.58 (0.40)	1.49 (0.58)	3.08 (0.45)	3.41 (0.58)
Preferences	−1.05 (0.38)	−1.18 (0.54)	−2.34 (0.43)	−2.06 (0.55)
Conventions	−0.73 (0.37)	−0.85 (0.53)	−2.04 (0.41)	−1.75 (0.54)
Male		−0.23 (0.62)		−0.35 (0.72)
Female		−0.21 (0.60)		−0.53 (0.68)
Other		−0.77 (0.90)		−0.24 (0.91)
Age		0.01 (0.02)		0.00 (0.02)
Level-2 standard deviation	1.29 (0.36)	1.32 (0.38)	1.94 (0.32)	2.00 (0.33)

Hamiltonian Monte Carlo run with 4 chains, each with 8000 iterations; Rhat <1.01 for all parameters; reported coefficients are estimated posterior means; estimated standard errors in brackets; 196 statement evaluations (level 1) nested in 49 participants (level 2) in the abstract models; 576 statement evaluations (level 1) nested in 32 participants (level 2).

=.43, Bayes-$p < .001$). Contrary to the abstract version, moral statements are evaluated in a more objectivist manner than are statements about personal preferences (mean contrast = 1.34, sd =.38, Bayes-p =. 0001) and statements about social conventions (mean contrast = 1.03, sd =.36, p = .002). The full results of our analysis are shown in Table 9.

4.3.5. Testing Hypothesis 3: Moral error for philosophers

We estimate two models for both the abstract and concrete versions: models I and III without control variables, and models II and IV with gender and age as control variables. We use models II and IV for hypothesis testing. For the abstract version, Model II refutes hypothesis 3: moral statements are evaluated in a less objectivist manner than scientific statements (mean contrast = −2.31, sd =.58, $p < .0001$). In addition, moral statements are evaluated in a more objectivist manner than are statements about personal preferences (mean contrast = 0.93, sd =.50, $p = .028$) but not statements about social conventions (mean contrast =.57, sd =.0.50, $p = 0.11$). The results for the concrete version in Model IV paint a picture similar to the abstract version. Moral statements are once again evaluated in a significantly less objectivist manner than scientific statements (mean contrast =-3.66, sd =.0.41, $p < .0001$). Also, moral statements are evaluated in a more objectivist manner than are both statements about personal preferences (mean contrast = 1.32, sd =.41, $p = .0001$) and social conventions (mean contrast = 0.86, sd = 0.38, $p = 0.01$). The full results of our analysis are shown in Table 10.

4.4. Discussion

As explained above, some proponents of FMO might object to our first study by pointing out that FMO is about ordinary people's reflective and tutored

Table 10. Results of multilevel logistic regressions with log odds of "possibility of error" as response variable.

	Abstract		Concrete	
Coefficients	Model I	Model II	Model III	Model IV
Morality	−0.08 (0.39)	−0.34 (0.54)	−1.16 (0.37)	−0.64 (0.52)
Science	2.16 (0.48)	1.97 (0.60)	2.48 (0.45)	3.02 (0.58)
Preferences	−0.99 (0.41)	−1.28 (0.56)	−2.42 (0.46)	−1.96 (0.57)
Conventions	−0.64 (0.39)	−0.92 (0.55)	−1.96 (0.44)	−1.49 (0.56)
Male		−0.26 (0.68)		0.04 (0.74)
Female		−0.28 (0.65)		−0.95 (0.73)
Other		−0.06 (0.92)		−0.12 (0.92)
Age		0.02 (0.02)		−0.02 (0.02)
Level 2 standard deviation	1.73 (0.41)	1.83 (0.42)	2.30 (0.38)	2.31 (0.38)

Hamiltonian Monte Carlo run with 4 chains, each with 8000 iterations; Rhat <1.01 for all parameters; reported coefficients are estimated posterior means; estimated standard errors in brackets; 196 statement evaluations (level 1) nested in 49 participants (level 2) in the abstract models; 594 statement evaluations (level 1) nested in 33 participants (level 2).

beliefs. To address this objection Study 2 replicated Study 1 among philosophy faculty members, philosophy researchers and lecturers (including PhD students), and philosophy bachelor and master students. These are people that are particularly likely to reflect and to have received some tutoring.

We approached philosophy staff and students of different universities in Europe and the United States via e-mail. Although this method leads to a smaller sample size compared to conducting a study on Amazon Mechanical Turk, we nevertheless observe similar results as we did in Study 1. In general, participants in both the abstract and the concrete condition ascribed similar (at most slightly higher) levels of objectivity to moral statements as to statements about personal preferences or social conventions, and significantly lower levels than they ascribed to scientific statements.

Study 2 hence provides at least suggestive evidence that even if ordinary people engaged in reflection and were informed they would still not dominantly believe in the possibility of objective moral progress, knowledge and error. This result is in tension with FMO (or at least it is if we assume that it is not explained by other differences between philosophers and philosophy students on the one hand and ordinary people on the other).

5. General discussion

FMO has played an important role in metaethics. Many metaethicists believe that theories in this area need to account for FMO. Most importantly, according to the presumptive argument mentioned above, the fact that ordinary people believe that morality is objective has been thought to generate a *prima facie* reason to accept that morality is indeed objective (e.g., Brink, 1989; Dancy, 1986; Enoch, 2017a, 2017b; Huemer, 2005; McNaughton, 1988). But is FMO true?

Several recent studies on INDEPENDENCE and EXCLUSION suggest that with regard to many moral statements ordinary people do not believe in moral objectivity (e.g., Davis, 2020; Pölzler & Wright, 2020; Sarkissian et al., 2011; Theriault et al., 2017; Wright & Pölzler, 2022). The research reported in this paper points in the same direction. It empirically challenges FMO by providing evidence about PROGRESS, KNOWLEDGE and ERROR. In particular, we found that, neither abstractly nor concretely, neither ordinary participants nor those who are more likely to fit conditions of reflection and tutoring, dominantly believe in objective moral progress, knowledge and error. They attribute less objectivity to these phenomena than in the case of science and no more, or only slightly more, than in the cases of social conventions and personal preferences.

Needless to say, we do not purport to have refuted FMO. Our research is an initial exploration of PROGRESS, KNOWLEDGE and ERROR in the context of moral objectivity that is limited in several respects beyond those that have already been mentioned. One of these respects concerns our results' generalizability to other groups, especially across cultures (see Henrich et al., 2010). While participants from Amazon Mechanical Turk have been shown to be more demographically diverse than standard inter-net samples and in particular student samples (in terms of e.g., age and ethnicity; see, e.g., Buhrmester et al., 2011), the overwhelming majority of our participants in Study 1 were from the United States. Our participants in Study 2 were recruited from a small number of particular philosophy departments and where mostly from Austria, Croatia, China, The Netherlands, Germany and the United States.

Regarding our experimental design, one potential issue arises from the fact that our answer options fail to reflect some more sophisticate metaethi-cal views, such as the views of some contemporary non-objectivists who hold that while there are no moral truths under the assumption of a correspondence-theoretic understanding of 'truth', there are at least moral truths in a deflationary sense (according to which to say of a moral sentence that it is true simply is to reaffirm this sentence) (see Beebe, 2022; Blackburn, 1993, 1998; Gibbard, 1990; for discussions of this limitation see Pölzler & Wright, forthcoming)

Another limitation only concerns the concrete conditions of our studies. In these conditions our results are contingent on our particular item state-ments. We accounted for the fact that ordinary people's intuitions vary with the content of these statements by striving for a high degree of diversity in several relevant respects. Participants were also given the opportunity to self-classify statements as moral or non-moral, and even when analyses were based on these self-classifications their results did not change. It is still possible, however, that when presented with other moral statements –

especially a higher number of statements of the harm and fairness categories – FMO will receive more support.

Critics may also attempt to cast doubt on the validity of our measures of beliefs about progress, knowledge and error by pointing to the high proportion of non-objectivist responses to science, in particular among lay people. For example, in the concrete conditions 46,67% of participants responded that there cannot be objective progress about the scientific questions that we presented them with, 31,61% denied the possibility of objective knowledge and 53,71% denied the possibility of objective error (see Table 2). We agree that this finding calls for an explanation. However, it is not clear that the best explanation needs to involve doubts about the validity of our measures. Several studies that used different measures of metaethical beliefs have found a high proportion of scientific non-objectivism among lay people as well (e.g., on average 40% in Beebe & Sackris, 2016). This phenomenon, though surprising, may thus very well be real.

Yet another limitation arises from potential inconsistencies in ordinary people's metaethical commitments. We already pointed to the possibility that different features of moral thought and practice may reflect FMO to different extents. This means that features beyond the most prominent ones – INDEPENDENCE, EXCLUSION, PROGRESS, KNOWLEDGE, and ERROR – could perhaps still change the balance in favor of FMO.

Ordinary people could also endorse certain sub-theses of moral objectivism to a higher extent than they endorse the theory in total. For example, all objectivist theories presuppose moral cognitivism, i.e., the claim that moral statements purport to refer to facts or are truth-apt. In some recent studies, strong majorities of participants turned out to endorse cognitivism (Pölzler & Wright, 2020, forthcoming; Wright, 2018; but see Goodwin & Darley, 2008; Wright et al., 2013, 2014). Our methodology only targets belief in moral objectivism in general and hence does not allow for such more fine-grained assessments.

Finally, the extent to which FMO is undermined by the results of any empirical study crucially depends on how this thesis is understood. Proponents of FMO may not only argue that the extant empirical research is of little relevance because they assume that only reflective and informed people regard morality as objective (this is the objection that we addressed in study 2); they may, for example, also state that their thesis is about more implicit objectivist commitments than the ones that we measured (Björnsson, 2012; Enoch & Russ, ; Zijlstra, 2021; for a brief discussion of this limitation see fn. 2).

Another respect in which FMO is unclear concerns the proportion of ordinary people who need to believe in moral objectivism for the thesis to be true. Clearly, more than 50% would need to be objectivists; and this already suffices to conclude that FMO will be hard to reconcile with the results of

our studies. But how much more? Would the claim that ordinary people are moral objectivists be true if 70% believed in moral objectivity? What if these 70% believed in the objectivity of 80% of the moral judgments that they make but not in the objectivity of the other 20%?

Questions such as these affect how strongly the results presented here speak against FMO, and how strongly previous studies on INDEPENDENCE and EXCLUSION do so.[18] Still, all in all, we believe that our study, alongside these other studies, makes it at least somewhat harder to assume FMO. Metaethicists may have reason to question whether their theories really need to account for the assumption that people believe in moral objectivity; and in particular, whether this assumption really generates a *prima facie* reason to believe in moral objectivity. This result may hence strengthen non-objectivist theories in metaethics. It may be taken to support that the truth or falsity of moral judgments is constituted by the perspective or the beliefs of specific individuals or cultures (e.g., Harman, 1996); or that these judgments cannot be true at all (e.g., Mackie, 1977).

6. Conclusion

This study attempted to contribute to the empirical assessment of philosophers' thesis that ordinary people believe in moral objectivity (FMO). If this thesis were true then people should believe in the possibility of objective moral progress, objective moral knowledge, and objective moral error. We developed surveys to investigate whether these predictions hold. Our results suggest that, neither abstractly nor concretely, people dominantly believe in the possibility of objective moral progress, knowledge and error. They attribute less objectivity to these phenomena than in the case of science and no more, or only slightly more, than in the cases of social conventions and personal preferences. This finding was obtained for a regular sample as well as for a sample of people who are particularly likely to be reflective and informed (philosophers and philosophy students). Our paper hence contributes to recent empirical challenges to the thesis that people believe in moral objectivity.

Notes

1. The moral objectivism/non-objectivism debate is about the existence of objective moral truths. It is hence distinct from the debate between moral universalists and relativists (e.g., Joyce 2021; Pölzler, 2018; Sousa et al. 2021). Universalists and relativists disagree about the *scope* of moral statements, i.e., about how widely these statements apply. More specifically, universalists believe that true moral sentences are true for any individual at any time and any place, while relativists relativize the truth of these sentences to particular individuals, times or places. Some previous research on folk metaethics has not sufficiently distinguished between these two metaethical debates. Our studies, in contrast, have been designed to exclusively contribute to the

question of whether ordinary people are *objectivists* (not to the question of whether they are universalists).

2. Theories in metaethics that are 'realist' endorse the idea that (at least some) moral judgments are objectively true or false.

3. Some early studies, such as by Nichols (2004) and Goodwin and Darley (2008), have been taken to support FMO. However, upon closer examination, and taking into account some plausible objections against the researchers' own interpretation of their data, even these early studies show strongly varying metaethical beliefs (Pölzler, 2017).

4. Another criticism of most of these studies has been that they have mostly measured people's explicit commitments about moral objectivity, while FMO is about their implicit beliefs (e.g., Björnsson, 2012; Brink, 1989; Enoch & Russ, 2017b). This is a valid worry. In the present research we also employ measures that are only somewhat implicit. However, there is not yet evidence for the claim that ordinary people's (highly) implicit and explicit beliefs about moral objectivity diverge. In fact, they appear to be rather similar in content. For example, some recent studies with highly implicit measures – neuroimaging methods in the case of Theriault et al. (2017, 2020); an implicit association test in the case of Wagner et al. (forthcoming) – too found that people's beliefs about moral objectivity varied but generally tended in the direction of non-objectivism.

5. To reemphasize, our studies are meant to advance philosophical theorizing about moral objectivity. They can only do so if they test the folk's beliefs about moral objectivity in the same sense of "objectivity" that is assumed in metaethics, i.e., in the sense of mind-independence, as introduced in the paper's first paragraph. We will hence limit our inquiries and discussion to moral objectivity in this particular sense. For attempts to test lay people's moral objectivity beliefs in a broader sense, that is open to redefining "objectivity" in the light of empirical evidence, see, e.g., Lieuwe (2019).

6. Moreover, error theorists (according to whom all of our moral judgments are mistaken) also grant that moral errors are possible.

7. There are different ways of understanding the abstract/concrete distinction. Struchiner et al. (2020) distinguish the following three main interpretations: (1) general vs. specific, (2) fictional vs. actual, (3) indetermined vs. determined. Our studies assume the general vs. specific interpretation, as it seems to explain most of the abstract/concrete differences that have been found in philosophical beliefs about matters other than moral objectivity (e.g., about free will and moral responsibility, see Nichols & Knobe, 2007).

8. That lay people typically regard scientific statements as objective and statements about social conventions and personal preferences as nonobjective is suggested by prior research in folk metaethics (e.g., Beebe & Sackris, 2016; Goodwin & Darley, 2008; Wright and Pölzler, 2022).

9. The study involved four simple attention checks. For example, one of the checks read as follows: "To what extent do you agree with the following statement: I have never used a computer or smartphone in my entire life.".

10. Participants were excluded from analysis if they finished the study in less than 135 seconds in the abstract condition or less than 285 seconds in the concrete condition. These cutoff values were set by the researchers on the basis of several test runs and represent the average time that it took participants in these test runs to read all the materials in the respective conditions.

11. Hamiltonian Monte Carlo estimation in Stan, with 4 chains with 8000 iterations each. The model has random effects for participants (not shown) with mean 0 and estimated level-2 standard deviation. Rhat <1.01 for all parameters. Reported coefficients are estimated posterior means with estimated standard errors in brackets. 864

statement evaluations (level 1) nested in 216 participants (level 2) in the abstract models. 3474 statement evaluations (level 1) nested in 193 participants (level 2) in the concrete models.

12. Whenever we write Bayes-p < 0.001 we imply that out of 10,000 samples from the posterior distribution of the parameters not a single contrast was smaller/greater than or equal to 0 (depending on the direction of testing).

13. This is hardly surprising, considering the fact that even philosophers themselves have understood objectivity in a number of different ways; see, e.g., the explanations by (Church, 2022; Cohen, 2022; Hopster, 2019; Huemer, 2005; Miller, 2009).

14. We are aware that this way of operationalizing Brink's "reflective and tutored" requirement is imperfect in several respects. That said, not only is there reason to believe that people who study philosophy or are professional philosophers are on average more reflective and tutored when it comes to the question of moral objectivity than people who lacks these attributes; in the end, specifying what it means for somebody to be sufficiently reflective and tutored with regard to this matter is and cannot be the job of those who criticize such qualified versions of the presumptive argument in the first place. Rather, its Brink and other proponents who should be clear about who they consider the empirical premise of this argument to apply to, so that experimental researchers can then operationalize "reflective and tutored" accordingly.

15. This claim is supported, among others, by the plausible hypothesis that in the course of their training philosophers internalize distinctions and concepts that help them to think about moral objectivity at a higher level of complexity. This, in turn, may not only influence their explicit beliefs (as evinced by their publications, seminar papers, talks, etc.) but also their more implicit ones.

16. This claim is supported by the verbal responses to a brief pilot study as well as by the results of the 2020 PhilPapers survey, a survey of 1785 English-speaking philosophers from various countries. In this survey, when asked whether they accept or lean toward "moral realism" or "moral anti-realism" (most often understood as equivalent to "moral objectivism" and "moral non-objectivism") 12.68% of responses fell into the "Other" category. More specifically, 2.44% of responded selected "Accept an alternative view", 3.49% selected "The question is too unclear to answer", 0.87% selected "There is no fact of the matter" and 4.25% selected "Agnostic/undecided".

17. Note that this study included an "other"-response option. This means that not all responses that were not in favor of objectivism were in favor of non-objectivism. Some of them also reflect "other"-replies. The proportion of these replies was generally low, however. This in particular holds for the concrete condition. In this condition for no domain in no dimension more than one participant selected the "other" option. In some cases, participants who selected this option provided a text response. Both the proportion of "other"-responses as well as these text responses are shown in the second appendix. Finally, note that "other" responses were not included in the statistical analysis of the data.

18. Note that it is on proponents of FMO to specify what they mean when they claim that ordinary people are moral objectivists. As long as they have not done so empirical researchers can only work with some interpretation of this claim or the other.

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Notes on contributors

Thomas Pölzler is a researcher and lecturer at the Philosophy Department of the University of Graz, Austria. He mainly works on moral psychology and metaethics.

Lieuwe Zijlstra is assistant professor at the Department of Social Science at the University College Groningen. Most of his research is in experimental philosophy.

Jacob Dijkstra is associate professor of sociology and director of studies at the University of Groningen / ICS. His research interests include experimental methods, game theory, mathematical sociology, collective action, and social networks.

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ORCID

Thomas Pölzler http://orcid.org/0000-0002-4311-0897

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Appendices

Participant-Classifications of Statements (Studies 1 and 2)

Study 1. All Respondents.

	Morality	Conventions	Science	Preferences
A country with the death penalty is morally worse than a country without.	59.2%	22.2%	5.6%	13%
On earth, the chemical formula of water molecules is H_2O.	0.7%	4.4%	92.4%	2.4%
Before the third month of pregnancy, abortion for any reason is morally permissible.	57.7%	18.3%	7.3%	16.6%
Shakespeare was a better writer than is Dan Brown (author of "The Da Vinci Code").	2%	7.8%	6.8%	83.4%
Wearing pajamas and bath robe to a seminar meeting is wrong behavior.	3.7%	73.3%	3.9%	19.1%
It is morally wrong for parents to physically punish their children in violent ways.	64.8%	19.8%	6.6%	8.8%
It is morally good to do unto others as you would have them do unto you.	72.9%	14.7%	3.4%	9%
Boston (Massachusetts) is farther north than Miami (Florida).	1%	6.1%	89.7%	3.2%
Eating factory-farmed meat is morally bad.	43%	15.2%	9.8%	32%
Getting tattoos and/or body piercings is permissible.	5.1%	33%	3.9%	57.9%
Helping terminally ill patients end their lives is morally permissible.	67.2%	14.7%	6.4%	11.7%
Cleaning one's bathroom with the American flag is morally impermissible.	37.2%	42.8%	6.1%	13.9%
One ought not speak with one's mouth full.	7.1%	73.3%	3.7%	15.9%
Classical music is better than rock music.	1.2%	5.1%	4.9%	88.8%
The earth is flat.	1.2%	8.2%	70.7%	19.6%
Siblings morally ought not to kiss each other on the mouth passionately.	50.4%	38.6%	3.4%	7.6%
Selling children on the internet is morally wrong.	82.9%	9.8%	4.2%	3.2%
Talking loudly and constantly to the person next to you during a lecture is a permissible action.	8.3%	73.1%	4.2%	14.4%

Study 1. Only Respondents in Concrete Condition.

	Morality	Conventions	Science	Preferences
A country with the death penalty is morally worse than a country without.	59.6%	21.2%	6.2%	13%
On earth, the chemical formula of water molecules is H_2O.	1%	4.7%	90.7%	3.6%
Before the third month of pregnancy, abortion for any reason is morally permissible.	58.5%	15.5%	7.8%	18.1%
Shakespeare was a better writer than is Dan Brown (author of "The Da Vinci Code").	2.6%	10.9%	7.8%	78.8%
Wearing pajamas and bath robe to a seminar meeting is wrong behavior.	4.1%	66.3%	4.1%	25.4%
It is morally wrong for parents to physically punish their children in violent ways.	59.6%	21.2%	7.8%	11.4%
It is morally good to do unto others as you would have them do unto you.	69.4%	15.5%	4.7%	10.4%
Boston (Massachusetts) is farther north than Miami (Florida).	2.1%	5.7%	87.%	5.2%
Eating factory-farmed meat is morally bad.	36.3%	17.1%	10.9%	35.8%
Getting tattoos and/or body piercings is permissible.	6.2%	31.2%	5.7%	57%
Helping terminally ill patients end their lives is morally permissible.	65.3%	15.5%	6.7%	12.4%
Cleaning one's bathroom with the American flag is morally impermissible.	39.4%	42%	5.2%	13.5%
One ought not speak with one's mouth full.	6.7%	67.9%	4.7%	20.7%
Classical music is better than rock music.	1%	8.3%	5.7%	85%
The earth is flat.	1%	8.3%	76.7%	14%
Siblings morally ought not to kiss each other on the mouth passionately.	51.3%	35.8%	3.1%	9.8%
Selling children on the internet is morally wrong.	81.3%	10.4%	4.7%	3.6%
Talking loudly and constantly to the person next to you during a lecture is a permissible action.	6.2%	73.6%	3.6%	16.6%

Study 2. All Respondents.

	Morality	Conventions	Science	Preferences
A country with the death penalty is morally worse than a country without.	75.9%	15.7%	3.6%	4.8%
The chemical formula for water is H_2O.		7.2%	91.6%	1.2%
Abortion is morally permissible.	83.1%	8.4%	2.4%	6%
Shakespeare is a better writer than is Dan Brown (author of The Da Vinci Code).	1.2%	15.7%	13.3%	69.9%
Wearing pajamas and bath robe to a seminar meeting is wrong behavior.	2,4%	91.6%		6%
Physical punishment is morally wrong.	78.3%	18.1%	2.4%	1.2%
It is good to do onto others as you would have them do onto you.	78.3%	13.3%		8.4%
Boston (Massachusetts) is farther north than Miami (Florida).		3.6%	94%	2.4%
Eating factory-farmed meat is morally bad.	72.3%	10.8%	2.4%	14.5%
Getting tattoos and/or body piercings is okay.	8.4%	50.6%		41%

(Continued).

	Morality	Conventions	Science	Preferences
Helping terminally ill patients end their lives is morally permissible.	79.5%	4.8%	2.4%	13.3%
Cleaning one's bathroom with the American flag is morally impermissible.	26.5%	53%		20.5%
One ought not speak with one's mouth full.	2.4%	95.2%		2.4%
Classical music is the best kind of music.	1.2%	12%	6%	80.7%
The earth is flat.		7.2%	90.4%	2.4%
Siblings ought not to kiss each other on the mouth passionately.	27.7%	61.4%	2.4%	8.4%
Selling children on the internet is morally wrong.	89.2%	8.4%	1.2%	1.2%
Talking loudly and constantly to the person next to you during a lecture is a permissible action.	28.9%	67.5%		3.6%

"Other" Responses (Study 2)

Version: Abstract

Dimension: **Progress**
Preferences: 7 'Other' responses, 1 person text.

- I don't know what counts as personal preferences. If you're talking about things like character and taste, I think there may have been progress because a higher population is educated now compared to before. However, I don't know the stats on that

Morality: 3 'Other' responses, 2 persons text.

- The discussion of 'objective truth' is all very shady! I would avoid the use of 'objective truth' but rather a truth that we as a society objectively agree upon (so it's an truth, established conventionally but it's not 'The Truth'). So, I think there has been moral progress in the sense that there are truth(s) that we collectively agree upon now(i.e. 'Hitting children is wrong' is not morally objectionable among people in well-developed countries). However, there has not been progress in the sense that all established truths are acknowledged by everyone around the globe and are being practiced. This discussion is too broad because we should talk about in what sense we have progressed and in what sense we haven't.
- There can be progress if person believe in Christian God.

Science: No 'Other' responses
Conventions: 6 'Other' responses, 3 persons text

- There can and has been progress in the sense of arriving at moral conventions that result in better outcomes.
- There can be or has been progress toward something that is not objective truth but is a pragmatic goal of the society as a whole (not just particular cultures or individuals)
- There is sometimes progress but there are as well regresses too.

Version: Abstract

Dimension: Knowledge
Preferences: 8 'Other' responses, no text
Morality: 4 'Other' responses, 2 persons text

- I think a pre-condition or assumption here is that the individual is a moral person from birth, and so cares about the questions of morality etc. That means, in a way it may not be possible to know the answer to any objective moral question if you are immoral to begin with (for the sake of argument, a person is immoral for instance if he/she intentionally hurt animals and enjoy it). However, this is not a black and white matter. So if a person is not 'completely' amoral, then they may learn about a moral question (i.e., form a belief about it) 'objectively' or 'subjectively'. So, a posteriori knowledge about moral beliefs is also possible.
- Yes, if and only if person believes in Christian God.

Science: No 'Other' responses
Conventions: 3 'Other' responses, 2 persons text

- It is possible to acquire such knowledge only if a person believe in Christian God.
- What are the social conventions? Are they the same as norms? If so, I think people can objectively and/or subjectively know the answer to some of these questions.

Version: Abstract
Dimension: Error
Preferences: 9 'Other' responses, no text
Morality: 6 'Other' responses, 2 text

- It's hard to understand 'false' in relation to moral claims. Again there's an assumption that there's an objective truth that we are all aware of and can evaluate moral questions in light of this truth. If we grant that this is in fact the case, I'd say it's possible to err in responsing to moral questions because lack of knowledge of self and others (and potentially other reasons)
- Yes, persons can err even if they are Christians.

Science: 1 'Other' response

- Yes you can fail in answering the scientific questions because any number of reasons including 'failing to grasp their truth (truth as publicly established or demonstrated))

Conventions: 2 'Other' responses, 1 with text

- Yes. I don't agree with use of the word subjective or objective truth here. Questions about social conventions are different from moral questions, because conventions are generally not as motivated by notions of truth and morality and they may have other causes. I think people can be wrong about the 'acceptable' social conventions easily depending on place time etc.

Version: Concrete: Death penalty
Dimension: Progress: 1 other, 1 text

- Of course it is better without it. But it does not mean that there is some special objective truth about it. Better is one thing, objective truth is another.

Dimension: Knowledge: 1 other, 1 text

- Everybody knows that, without "objective, truth, knowledge, etc."

Dimension: Error: 1 other, no tex
Version: Concrete: Abortion
Dimension: Progress: No other
Dimension: Knowledge: No other
Dimension: Error: No other

Version: Concrete: Physical punishment

Dimension: Progress: 1 other

- It depends. Mutilation or something is certainly bad.

Dimension: Knowledge: 1 other

- Relevant facts about it would be largely factual, not evaluative.

Dimension: Error: 1 other, no text
Version: Concrete: Golden rule

Dimension: Progress: no other
Dimension: Knowledge: 1 other

- It is impossible because this claim seems false to me.

Dimension: Error: no other
Version: Concrete: Factory-farmed meat
  Dimension: Progress: no other
  Dimension: Knowledge: no other
  Dimension: Error: 1 other, no text

Version: Concrete: Kissing siblings
Dimension: Progress: no other
Dimension: Knowledge: no other
Dimension: Error: 1 other, no text

Version: Concrete: Flag Cleaning
Dimension: Progress: no other
Dimension: Knowledge: no other
Dimension: Error: 1 other, no text

Version: Concrete: Euthanasia
Dimension: Progress: no other
Dimension: Knowledge: no other

Dimension: Error: 1 other, no text

Version: Concrete: Flat earth
Dimension: Progress: 1 other, no text
Dimension: Knowledge: no other
Dimension: Error: 1 other, no text

Version: Concrete: Location Boston/Miami
Dimension: Progress: 1 other, no text
Dimension: Knowledge: no other
Dimension: Error: no other

Version: Concrete: Formula H20
Dimension: Progress: no other
Dimension: Knowledge: 1 other, no text
Dimension: Error: no other

Version: Concrete: Classical Music
Dimension: Progress: no other
Dimension: Knowledge: no other
Dimension: Error: 1 other, no text

Version: Concrete: Shakespeare vs. Brown
Dimension: Progress: no other
Dimension: Knowledge: no other
Dimension: Error: 1 other, no text

Version: Concrete: Tattoos and piercings
Dimension: Progress: no other
Dimension: Knowledge: no other
Dimension: Error: 1 other, no text

Version: Concrete: Talking during lecture
Dimension: Progress: no other
Dimension: Knowledge: no other
Dimension: Error: 1 other, no text

Version: Concrete: Speaking with mouth full
Dimension: Progress: no other
Dimension: Knowledge: no other
Dimension: Error: 1 other, no text

Version: Concrete: Wearing Pajamas and bathrobe
Dimension: Progress: no other
Dimension: Knowledge: no other
Dimension: Error: 1 other, no text