Supplemental Material of the Article:

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1. Theory

Consider a decision maker who maximizes his/her expected utility who faces three risks, $R_1(p_1, L_1)$, $R_2(p_2, L_2)$ and $R_3(p_3, L_3)$. The three risks have the same expected value, but $L_1 > L_2 > L_3$ and $p_1 < p_2 < p_3$. That is, R_1, R_2 and R_3 have equal means, but differ with respect to their variance. WTP for insurance against these risks is defined by the premium payment that results in equality of expected utility with and without insurance, therefore:

$$U[W\text{-}WTP_1]=p_1U[W\text{-}L_1]+(1\text{-}p_1)U[W] \quad (1)$$

$$U[W\text{-}WTP_2]=p_2U[W\text{-}L_2]+(1\text{-}p_2)U[W] \quad (2)$$

$$U[W\text{-}WTP_3]=p_3U[W\text{-}L_3]+(1\text{-}p_3)U[W] \quad (3)$$

The individual in this case has initial wealth, W, and faces a loss, $L \in (0, W)$, with probability p $(0 < p < 1)$ and no loss with probability $1 - p$ (we assume that the probability of loss is objectively known, as it is in our study). The individual has a strictly increasing utility function $U(\cdot)$, defined on final wealth. For bundled risk, where the individual must decide whether to insure against all risks together in one combined policy, there are eight possible final wealth states defined according to Table S1 without insurance:

$$\begin{aligned} U[W\text{-}WTP_B]=&p(A)U[W\text{-}L_1]+p(B)U[W\text{-}L_2]+\\ &p(C)U[W\text{-}L_3]+p(D)U[W\text{-}L_1\text{-}L_2]+p(E)U[W\text{-}L_1\text{-}L_3]+\\ &p(F)U[W\text{-}L_2\text{-}L_3]+p(G)U[W\text{-}L_1\text{-}L_2\text{-}L_3]+\\ &\big(1\text{-}p(A)\text{-}p(B)\text{-}p(C)\text{-}p(D)\text{-}p(E)\text{-}p(F)\text{-}p(G)\big)U[W] \end{aligned} \quad (4)$$

Taking the certainty equivalent of equations 1, 2, 3 and 4 and subtracting initial wealth, which is common to each equation, allows for comparing WTP for insurance against the single risks vs. bundled risk:

$$U^{-1}\{U[W-WTP]\}-W=WTP \quad (5)$$

Under linear $U(\cdot)$ (risk neutrality):

$$\mathrm{WTP}_1 + \mathrm{WTP}_2 + \mathrm{WTP}_3 = \mathrm{WTP}_B \quad (6)$$

Under concave $U(\cdot)$ (risk aversion):

$$\mathrm{WTP}_1 + \mathrm{WTP}_2 + \mathrm{WTP}_3 < \mathrm{WTP}_B \quad (7)$$

Under convex $U(\cdot)$ (risk seeking):

$$\mathrm{WTP}_1 + \mathrm{WTP}_2 + \mathrm{WTP}_3 > \mathrm{WTP}_B \quad (8)$$

Therefore, a preference for comprehensive bundled insurance over covering each component risk separately is positively related to the degree of risk aversion.

Table S1: Final wealth states and associated probabilities of occurrence for bundled risk

Probability	Final wealth
$p(A) = p_1(1-p_2)(1-p_3)$	$W - L_1$
$p(B) = p_2(1-p_1)(1-p_3)$	$W - L_2$
$p(C) = p_3(1-p_1)(1-p_2)$	$W - L_3$
$p(D) = p_1 p_2(1-p_3)$	$W - L_1 - L_2$
$p(E) = p_1 p_3(1-p_2)$	$W - L_1 - L_3$
$p(F) = p_2 p_3(1-p_1)$	$W - L_2 - L_3$
$p(G) = p_1 p_2 p_3$	$W - L_1 - L_2 - L_3$
$1 - p(A) - p(B) - p(C) - p(D) - p(E) - p(F) - p(G)$	W

2. Elicitation of flood, fire, burglary and combined insurance demand

Elicitation of willingness-to-pay for flood insurance

Task 1a

Recall that every year there is a **one in 1,250** chance that your new home will be **flooded**. The estimated damage from a flood to your new home is **€80,000** (**£70,000**).

Of the monetary options displayed below, select the **maximum** you would be **willing to pay** per year to add **flood** coverage to your insurance policy.[1] (A follow-up question will ask for your exact willingness to pay.)

€0 (£0)	€6 (£5.25)	€16 (£14)	€48 (£42)	€160 (£140)	€480 (£420)	€1,280 (£1,120)	€3,520 (£3,080)
€2 (£1.75)	€8 (£7)	€24 (£21)	€64 (£56)	€240 (£210)	€640 (£560)	€1,920 (£1,680)	More than €3,520 (£3,080)
€4 (£3.50)	€12 (£10.50)	€32 (£28)	€80 (£70)	€320 (£280)	€960 (£840)	€2,560 (£2,240)	Don't know

Task 1b if "More than €3,520 (£3,080)" and "Don't know" are not selected

You indicated that you would be prepared to pay **€(£){amount selected in task 1a}** to add coverage of **flood** damage to your insurance policy, but not **€(£){next highest payment card value}**.

Within this range, what is the **maximum** amount of money you would be **willing to pay** per year to add **flood** coverage to your insurance policy? (if **€(£){amount selected in task 1a}** is still the maximum, simply type €(£){amount selected in task 1a} in the box.)

€(£) ………

[1] A previous question that is not the focus of this study asked respondents whether they would like to add flood coverage to an insurance policy that already covers fire and burglary related losses (Robinson et al., 2021). The flood probability was already stated in this question.

Task 1b if "More than €3,520 (£3,080)" is selected

You indicated that you would be prepared to pay more than **€3,520** (**£3,080**) to add coverage of **flood** damage to your insurance policy.

What is the **maximum** amount of money you would be **willing to pay** per year to add **flood** coverage to your insurance policy?

€(£) ………

Elicitation of willingness-to-pay for fire insurance

Task 2a

Imagine that every year there is a **one in 2,000** chance that your new home will catch on **fire**. The estimated damage from a fire to your new home is **€128,000** (**£112,000**).

Of the monetary options displayed below, select the **maximum** you would be **willing to pay** per year to insure the **fire** risk only. (A follow-up question will ask for your exact willingness to pay.)

€0 (£0)	€6 (£5.25)	€16 (£14)	€48 (£42)	€160 (£140)	€480 (£420)	€1,280 (£1,120)	€3,520 (£3,080)
€2 (£1.75)	€8 (£7)	€24 (£21)	€64 (£56)	€240 (£210)	€640 (£560)	€1,920 (£1,680)	More than €3,520 (£3,080)
€4 (£3.50)	€12 (£10.50)	€32 (£28)	€80 (£70)	€320 (£280)	€960 (£840)	€2,560 (£2,240)	Don't know

Task 2b if "More than €3,520 (£3,080)" and "Don't know" are not selected

You indicated that you would be prepared to pay **€(£){amount selected in task 2a}** to insure the **fire** risk only, but not **€(£){next highest payment card value}**.

Within this range, what is the **maximum** amount of money you would be **willing to pay** per year to insure the **fire** risk only? (if **€(£){amount selected in task 2a}** is still the maximum, simply type €(£){amount selected in task 2a} in the box.)

€(£) ………

Task 2b if "More than €3,520 (£3,080)" is selected

You indicated that you would be prepared to pay more than **€3,520** (**£3,080**) to insure the **<u>fire</u>** risk only.

What is the **<u>maximum</u>** amount of money you would be **<u>willing to pay</u>** per year to insure the **<u>fire</u>** risk only?

€(£) ………

Elicitation of willingness-to-pay for burglary insurance

Task 3a

Imagine that every year there is a **one in 100** chance that your new home will be **burgled**. The estimated cost of replacing your stolen items at your new home is **€6,400** (**£5,600**).

Of the monetary options displayed below, select the **<u>maximum</u>** you would be **<u>willing to pay</u>** per year to insure the **<u>burglary</u>** risk only. (A follow-up question will ask for your exact willingness to pay.)

€0 (£0)	€6 (£5.25)	€16 (£14)	€48 (£42)	€160 (£140)	€480 (£420)	€1,280 (£1,120)	€3,520 (£3,080)
€2 (£1.75)	€8 (£7)	€24 (£21)	€64 (£56)	€240 (£210)	€640 (£560)	€1,920 (£1,680)	More than €3,520 (£3,080)
€4 (£3.50)	€12 (£10.50)	€32 (£28)	€80 (£70)	€320 (£280)	€960 (£840)	€2,560 (£2,240)	Don't know

Task 3b if "More than €3,520 (£3,080)" and "Don't know" are not selected

You indicated that you would be prepared to pay **€(£){amount selected in task 3a}** to insure the **<u>burglary</u>** risk only, but not **€(£){next highest payment card value}**.

Within this range, what is the **<u>maximum</u>** amount of money you would be **<u>willing to pay</u>** per year to insure the **<u>burglary</u>** risk only? (if **€(£){amount selected in task 3a}** is still the maximum, simply type €(£){amount selected in task 3a} in the box.)

€(£) ………

Task 3b if "More than €3,520 (£3,080)" is selected

You indicated that you would be prepared to pay more than **€3,520** (**£3,080**) to insure the **burglary** risk only.

What is the **maximum** amount of money you would be **willing to pay** per year to insure the **burglary** risk only?

€(£) ………

Elicitation of willingness-to-pay for combined insurance

Task 4a

Recall that every year there is a **one in 1,250** chance that your new home will be **flooded**. The estimated damage from a flood to your new home is **€80,000** (**£70,000**);

every year there is a **one in 2,000** chance that your new home will catch on **fire**. The estimated damage from a fire to your new home is **€128,000** (**£112,000**);

every year there is a **one in 100** chance that your new home will be **burgled**. The estimated cost of replacing your stolen items at your new home is **€6,400** (**£5,600**).

Of the monetary options displayed below, select the **maximum** you would be **willing to pay** per year to insure the **flood, fire and burglary** risk combined. (A follow-up question will ask for your exact willingness to pay.)

€0 (£0)	€18 (£15.75)	€48 (£42)	€144 (£126)	€480 (£420)	€1,440 (£1,260)	€3,840 (£3,360)	€10,560 (£9,240)
€6 (£5.25)	€24 (£21)	€72 (£63)	€192 (£168)	€720 (£630)	€1,920 (£1,680)	€5,760 (£5,040)	More than €10,560 (£9,240)
€12 (£10.50)	€36 (£31.50)	€96 (£84)	€240 (£210)	€960 (£840)	€2,880 (£2,520)	€7,680 (£6,720)	Don't know

Task 4b if "More than €10,560 (£9,240)" and "Don't know" are not selected

You indicated that you would be prepared to pay **€(£){amount selected in task 4a}** to insure the **flood, fire and burglary** risk combined, but not **€(£){next highest payment card value}**.

Within this range, what is the **maximum** amount of money you would be **willing to pay** per year to insure the **flood, fire and burglary** risk combined? (if **€(£){amount selected in task 4a}** is still the maximum, simply type €(£){amount selected in task 4a} in the box.)

€(£) ………

Task 4b if "More than €10,560 (£9,240)" is selected

You indicated that you would be prepared to pay more than **€10,560** (**£9,240**) to insure the **flood, fire and burglary** risk combined.

What is the **maximum** amount of money you would be **willing to pay** per year to insure the **flood, fire and burglary** risk combined?

€(£) ……

3. Falk et al. (2018) Staircase method for eliciting risk preferences

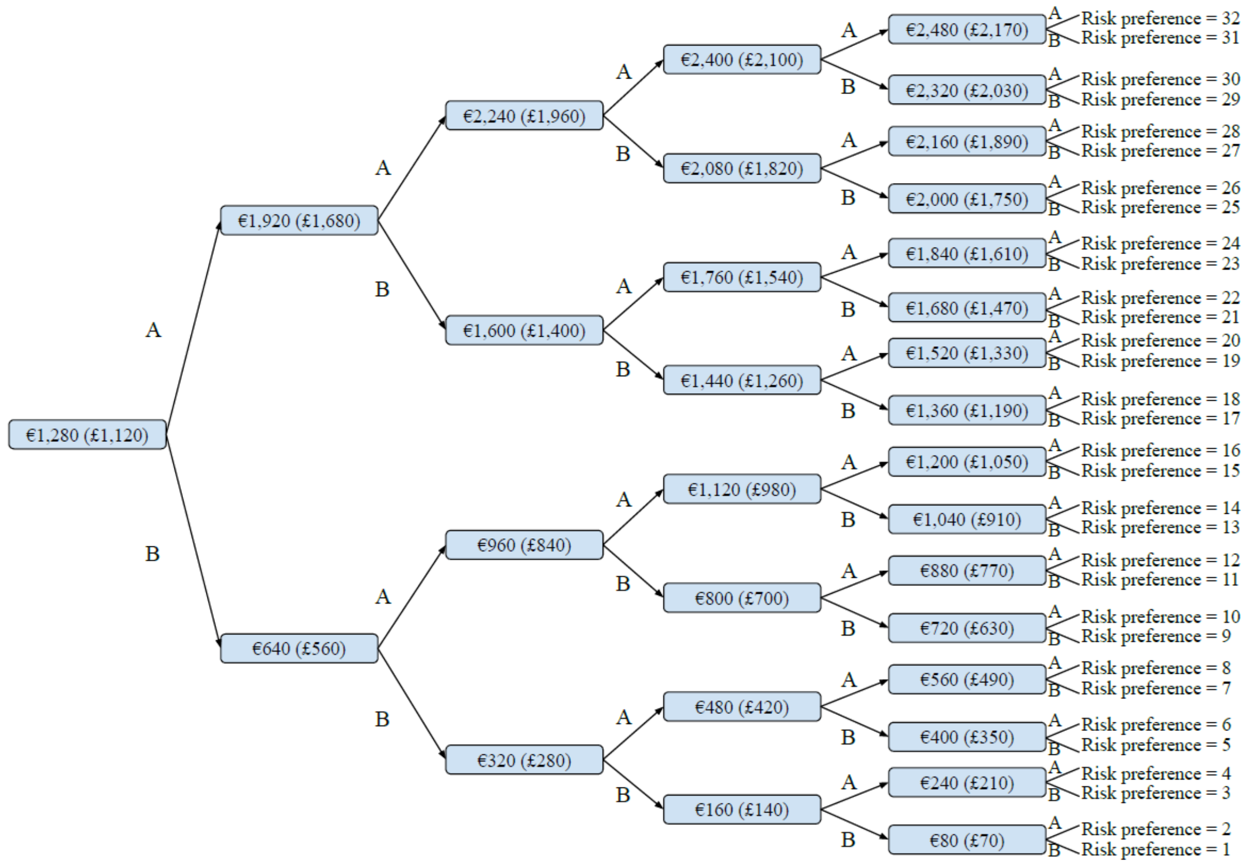

Figure S1: Falk et al. (2018) staircase method for quantitatively eliciting risk preferences

Notes: The monetary amounts are sure payments. “A” means that the lottery is chosen and “B” means that the sure payment is chosen. Each respondent was first asked to choose between receiving €1,280 (£1,120) for sure or a lottery with a 50:50 chance of receiving €2,400 (£2,100) or nothing. If the sure payment was chosen, the sure monetary amount being offered in the second question decreased to €640 (£560). In case the respondent chose the lottery, the sure monetary amount was raised to €1,920 (£1,680). The same logic applies to subsequent questions. Note that the original values used by Falk et al. (2018) were scaled up for our study to ensure easy conversion based on PPP.

4. Descriptive statistics

Table S2 displays descriptive statistics for the variables included in our analysis. Concerning demand for insurance, UK homeowners are willing to pay more for flood, fire, burglary and bundled coverage, compared to Dutch homeowners (Independent samples T-test p-values < 0.05 for flood, burglary and bundled coverage). Individuals who reside in the UK are also more likely to have been flooded in the past than Dutch residents in our sample (Chi-squared test p-value < 0.01).

The Dutch and UK homeowners do not differ significantly with respect to their risk preferences, measured according to the staircase method (Wilcoxon rank-sum test p-value > 0.1). Nevertheless, the UK sample is slightly more risk averse based on the stated measure of risk preferences (Wilcoxon rank-sum test p-value < 0.05). Furthermore, there are no significant differences between Dutch and UK homeowners for variables *male* and *higher education* (Chi-squared test p-values > 0.1), although individuals are slightly older on average in the Netherlands (Independent samples T-test p-value < 0.05). Our sample overrepresents males, older individuals and those with higher education, compared to the national averages (for the adult population with regards to education) in the Netherlands and UK (OECD, 2021; CBS, 2020; ONS, 2021). The age and education composition of our sample may be due to our sampling of homeowners specifically.

Table S2: Summary of variables by country

Variables	**Measurement**	**Coding**	**Netherlands M (SD)**[a]	**UK M (SD)**
Age	Age in years	Age in years	54.53 (13.58) N = 300	49.58 (14.93) N = 297
Male	Dummy variable measure of gender	Male = 1 and female = 0	0.55 N = 300	0.54 N = 297
Higher education[b]	Dummy variable measure of higher education	Higher education = 1 and no higher education = 0	0.52 N = 293	0.54 N = 277
Risk aversion (staircase method)[c]	Falk et al. (2018) staircase method of risk preference elicitation	Very risk seeking = 1 to very risk averse = 32	22.83 (9.19) N = 300	21.56 (10.41) N = 297
Stated risk aversion	General willingness to take risks	Very willing to take risks = 1 to completely unwilling to take risks = 11	6.10 (1.95) N = 300	6.58 (2.52) N = 296
Risk aversion index	Z-scored risk preference (staircase method) × 0.5 + z-scored stated risk preference × 0.5	Weighted measure of risk preferences	-0.02 (0.70) N = 300	0.02 (0.89) N = 296
Flood insurance demand	Maximum WTP for flood insurance according to payment card and follow-up question	WTP in euros[d]	94.17 (203.80) N = 256	220.89 (587.23) N = 275
Fire insurance demand	Maximum WTP for fire insurance according to payment card and follow-up question	WTP in euros	134.89 (249.24) N = 262	183.78 (529.50) N = 271
Burglary insurance demand	Maximum WTP for burglary insurance according to payment card and follow-up question	WTP in euros	78.07 (231.81) N = 260	209.86 (694.72) N = 272
Bundled insurance demand	Maximum WTP for bundled insurance according to payment card and follow-up question	WTP in euros	269.37 (419.70) N = 265	454.78 (1311.12) N = 266
Past flood	Dummy variable measure of previous flood	Flooded in the past = 1 and not flooded in the past = 0	0.02 N = 300	0.10 N = 297

Notes:

[a] The mean or proportion (M) is provided with the standard deviation (SD) in parentheses.

[b] Higher education refers to the respondent holding a Bachelor’s degree, Master’s degree or PhD.

[c] The risk preference items are reverse-coded to represent levels of risk aversion.

[d] The UK values have been converted to euros based on PPP.

5. Mediation analysis

A question that arises from our analysis is whether the difference in demand for flood insurance as well as whether the difference between the preference for bundled insurance over single policy insurance, between the UK and the Netherlands, can be explained by observed differences between the two countries, i.e. previous flooding experience. Table S1 conducts an exploratory mediation analysis to determine whether the effect of being from the UK on *flood insurance demand* is partly explained by having been previously flooded (model S1), and whether the effect of the UK variable on a preference for bundled insurance, over insurance against each component risk, is explained by having been previously flooded (model S2). For these analyses, we follow the mediation method of Kohler et al. (2011) and Breen et al. (2013).

Overall, compared to being a resident of the Netherlands, being a UK resident raises demand for flood insurance and lowers the preference for bundled insurance relative to single policy coverage (*UK dummy* coefficient p-values < 0.01 and < 0.1, respectively). Controlling for *past flood* leaves direct effects that are lower in magnitude and significance in both cases (p-values < 0.05 and > 0.1, respectively). The indirect effects, i.e. the share of the relationship between *UK dummy* and *flood insurance demand* and the share of the relationship between preference for bundled insurance over single policy insurance, that are due to the variable *past flood*, are significant at the 10 and 5 per cent levels, respectively.

Table S3: Decomposition of total effect of UK dummy on flood insurance demand into direct effect and indirect effect via past flood using OLS (model S1), and decomposition of total effect of UK dummy on the difference between bundled insurance demand and the sum of fire insurance demand, flood insurance demand and burglary insurance demand via past flood using OLS (model S2)

	Model S1		Model S2	
	Coefficient	**Standard error**	**Coefficient**	**Standard error**
Total effect	104.65***	38.88	-94.30*	49.18
Direct effect	90.88**	39.34	-73.53	49.77
Indirect effect via past flood	13.76*	7.10	-20.77**	9.77
Mediation %	13.15		22.03	
Observations	478		424	

Notes:
***Significant at 1%; **Significant at 5%; *Significant at 10%. Control variables are *risk aversion index*, *age*, *male* and *higher education*.

Additional References (not included in the article)

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