

CONTACTS:

For commentary on poll results and A.I. technology:

Dr. RICHARD SCHERL, Associate Professor of Computer Science

732-571-4457 (office)

rscherl@monmouth.edu

For information on poll results and methodology:

PATRICK MURRAY, Monmouth University Polling Institute

732-979-6769 (cell); 732-263-5858 (office)

pdmurray@monmouth.edu Twitter: @PollsterPatrick

Released: **Monday, April 20, 2015**

NATIONAL: THE GOOD AND *MOSTLY* BAD OF ARTIFICIAL INTELLIGENCE

Many Americans worried about threats to jobs, quality of life

Artificial Intelligence – the wave of the future or the end of human civilization? Many Americans are not sure according to the latest national *Monmouth University Poll*. Majorities feel that machines with artificial intelligence will negatively impact jobs and won't do much to improve our overall quality of life – even though many say they already rely on technology in their daily lives and a majority own a smart device with voice recognition applications.

Fully 7-in-10 Americans (70%) have heard the term “Artificial Intelligence” – or “A.I.” – although only 12% say they have heard a lot about recent developments in the ability of computers and machines to carry out decision-making thought processes similar to humans. A plurality of Americans (43%) say they believe scientists' ability to develop A.I. computers would do equal amounts of harm and good for society. However, a similar number (42%) believe they would actually do more harm overall – which is four times the number who say they would actually do more good than harm (11%). This finding is slightly more pessimistic than a generation ago. When this same question was asked in 1987 by Cambridge Reports, 29% of Americans said A.I. would do equal amounts of harm and good, 39% said it would do more harm and 20% said it would do more good.

“Like any technology, A.I. can lead to both positive and negative results. Those who are concerned about the negative consequences of A.I. should keep in mind that although significant results

have been obtained by researchers, there is still a huge gap between what machines can do and human-level intelligence,” said Dr. Richard Scherl, associate professor of computer science at Monmouth University whose research area is artificial intelligence, with a focus on knowledge representation and reasoning.

The poll asked Americans how worried they are that artificially intelligent machines could one day pose a risk to the human race’s existence. A majority say they are not at all (27%) or not too (28%) worried about this risk, but a sizeable minority are concerned – including 16% who are very worried and another 28% who are somewhat worried. Those with a high school education or less (54%) are more likely than those with some college background (45%) to be worried about AI’s impact on humanity, while college graduates (28%) are much less likely to fret over this scenario. Those who rely on technology a great deal in their everyday lives (36%) are less likely than those who rely on it only somewhat (46%), not much (51%), or not at all (56%) to be concerned about the risks of A.I. to humanity. Interestingly, there are no substantial differences in this finding based on how much respondents have heard about recent A.I. developments.

Nearly 3-in-4 (72%) Americans feel having machines with the ability to think for themselves would hurt jobs and the economy, while just 19% think they would help. A smaller majority (54%) say that artificially intelligent machines would also hurt human’s overall quality of life, while 35% think they would help. Americans who have heard a lot about recent developments in A.I. are more likely to say that this technology will help (49%) rather than hurt (40%) our quality of life, but a majority of this group still say AI will hurt (55%) rather than help (35%) jobs and the economy.

“The American public seems to be skeptical about the benefits of artificial intelligence even as the integration of machines into society and the economy deepens every day,” said Patrick Murray, director of the Monmouth University Polling Institute.

Monmouth pollsters also tested five hypothetical scenarios involving the use of artificially intelligent machines in lieu of humans and found that majorities are opposed to using A.I. in four of the five instances. The only scenario receiving majority support is using intelligent machines to perform risky jobs such as coal mining, with 76% of Americans saying this is a good idea and just 20% saying it is a bad idea.

Most Americans are opposed to using A.I. for a variety of other sensitive tasks. Solid majorities say it would be a bad idea to have self-driven local delivery trucks (67%), robotic nurses that can diagnose situations and administer medicine to bed-ridden patients (65%), machines that monitor and make decisions about the safety operations of nuclear power plants (60%) and armed military search drones that distinguish between enemy combatants and civilian bystanders and decide which buildings to attack (54%).

Those who have heard a lot about recent developments in A.I. are divided on whether self-driven delivery trucks are a good (48%) or bad (48%) idea and whether using A.I. to monitor nuclear plant safety is a good (49%) or bad (49%) idea. Majorities of this more aware group think that using A.I. for robotic nursing (56%) and seek-and-destroy combat drones (53%) are a bad idea.

“I too am wary of programs being allowed to make crucial decisions on their own, but they can be very helpful in augmenting human decisions in all of the above activities. A program can be trained to immediately recognize a situation that is likely to result in a vehicle collision or a nuclear reactor breakdown. It can do so with immediate reaction time and without ever getting tired,” said Monmouth computer scientist Scherl. “As illustrated by IBM’s Jeopardy playing program, Watson, current technology can search through large quantities of information, quickly finding the needed piece. Such techniques could find potential drug interactions that would be missed by a human physician or nurse.”

The poll also found that 6-in-10 Americans (61%) report owning a smartphone or device with voice recognition technology. Ownership of these devices is highest among 18 to 34 year olds (79%) and those with a college degree (76%). Nearly 4-in-10 (37%) Americans report relying on technology and computers a great deal in their daily life. Another 32% say they rely on technology somewhat, 21% not much, and just 10% not at all.

The *Monmouth University Poll* was conducted by telephone from March 30 to April 2, 2015 with 1,005 adults in the United States. This sample has a margin of error of ± 3.1 percent. The poll was conducted by the Monmouth University Polling Institute in West Long Branch, NJ.

DATA TABLES

The questions referred to in this release are as follows:

(* Some columns may not add to 100% due to rounding.)

1. Have you heard of the term Artificial Intelligence or A.I., or have you not heard of this?

	TOTAL	GENDER		AGE			EDUCATION		
		Male	Female	18-34	35-54	55+	HS or less	Some College	College grad
Yes, have heard	70%	76%	63%	78%	72%	59%	59%	70%	86%
No, have not heard	30%	24%	37%	22%	28%	41%	41%	30%	14%

2. Artificial Intelligence is the ability of computers and machines to carry out decision-making and thought processes similar to humans, sometimes referred to as computers being able to think for themselves. How much have you read or heard about recent developments in this area – a lot, a little, or nothing at all?

	TOTAL	GENDER		AGE			EDUCATION		
		Male	Female	18-34	35-54	55+	HS or less	Some College	College grad
A lot	12%	16%	9%	12%	14%	11%	8%	11%	21%
A little	53%	52%	53%	60%	50%	49%	45%	60%	57%
Nothing at all	35%	32%	38%	27%	36%	40%	47%	29%	22%

3. If computer scientists really were able to develop computers with artificial intelligence, what effect do you think this would have on society as a whole? Would it do more good than harm, more harm than good, or about equal amounts of harm and good?

	TOTAL	GENDER		AGE			EDUCATION			HEARD OF AI DEVELOPMENTS		
		Male	Female	18-34	35-54	55+	HS or less	Some College	College grad	A lot	A little	Nothing
More good than harm	11%	13%	8%	15%	9%	9%	9%	12%	13%	19%	11%	7%
More harm than good	42%	38%	45%	33%	45%	47%	47%	44%	31%	33%	38%	51%
About equal amounts of harm and good	43%	43%	43%	47%	43%	40%	39%	41%	52%	46%	47%	37%
(VOL) Don't know	4%	5%	3%	4%	3%	5%	5%	3%	4%	2%	4%	5%

4. Do you think having machines with the ability to think for themselves will help or hurt jobs and the economy?

	TOTAL	GENDER		AGE			EDUCATION			HEARD OF AI DEVELOPMENTS		
		Male	Female	18-34	35-54	55+	HS or less	Some College	College grad	A lot	A little	Nothing
Help	19%	24%	14%	22%	20%	15%	16%	20%	24%	35%	19%	14%
Hurt	72%	65%	78%	71%	72%	73%	75%	73%	65%	55%	72%	78%
(VOL) Depends	5%	5%	6%	6%	4%	6%	4%	4%	8%	8%	5%	5%
(VOL) Don't know	4%	5%	3%	2%	4%	6%	5%	3%	3%	2%	4%	4%

5. Do you think having machines with the ability to think for themselves will help or hurt human beings' quality of life?

	TOTAL	GENDER		AGE			EDUCATION			HEARD OF AI DEVELOPMENTS		
		Male	Female	18-34	35-54	55+	HS or less	Some College	College grad	A lot	A little	Nothing
Help	35%	42%	29%	46%	35%	26%	25%	43%	44%	49%	38%	25%
Hurt	54%	47%	60%	45%	55%	60%	64%	48%	44%	40%	50%	63%
(VOL) Depends	6%	8%	5%	5%	6%	7%	6%	6%	7%	8%	6%	6%
(VOL) Don't know	5%	4%	6%	4%	4%	6%	6%	3%	5%	3%	5%	5%

6. I am going to read you some examples of how artificial intelligence can be used. For each, please tell me whether you think it would be a good idea or bad idea to use machines with artificial intelligence to do these tasks. [READ ITEM] – Is that a good idea or bad idea? [ITEMS WERE ROTATED]

Armed military search drones that distinguish between enemy combatants and civilian bystanders and decide which buildings to attack

	TOTAL	GENDER		AGE			EDUCATION			HEARD OF AI DEVELOPMENTS		
		Male	Female	18-34	35-54	55+	HS or less	Some College	College grad	A lot	A little	Nothing
Good idea	40%	40%	39%	33%	41%	45%	40%	37%	43%	42%	40%	38%
Bad idea	54%	54%	55%	61%	53%	48%	55%	56%	52%	53%	56%	52%
(VOL) Depends	3%	3%	3%	3%	3%	3%	2%	5%	2%	3%	2%	4%
(VOL) Don't know	3%	3%	3%	2%	3%	4%	4%	2%	3%	2%	2%	5%

Robotic nurses for bed-ridden patients that can diagnose situations and decide when to administer medicine.

	TOTAL	GENDER		AGE			EDUCATION			HEARD OF AI DEVELOPMENTS		
		Male	Female	18-34	35-54	55+	HS or less	Some College	College grad	A lot	A little	Nothing
Good idea	31%	38%	24%	43%	26%	25%	29%	33%	32%	38%	33%	25%
Bad idea	65%	57%	73%	54%	69%	71%	68%	64%	62%	56%	64%	71%
(VOL) Depends	2%	2%	1%	1%	3%	1%	1%	1%	3%	6%	1%	1%
(VOL) Don't know	2%	2%	2%	2%	2%	3%	2%	2%	3%	0%	2%	3%

Self-driven local delivery trucks

	TOTAL	GENDER		AGE			EDUCATION			HEARD OF AI DEVELOPMENTS		
		Male	Female	18-34	35-54	55+	HS or less	Some College	College grad	A lot	A little	Nothing
Good idea	29%	34%	25%	36%	26%	26%	25%	25%	41%	48%	33%	17%
Bad idea	67%	62%	72%	61%	71%	69%	72%	72%	55%	48%	64%	78%
(VOL) Depends	2%	2%	2%	2%	1%	2%	1%	2%	3%	3%	1%	2%
(VOL) Don't know	2%	2%	2%	1%	2%	3%	2%	2%	2%	0%	2%	3%

Machines that perform risky jobs such as coal mining

	TOTAL	GENDER		AGE			EDUCATION			HEARD OF AI DEVELOPMENTS		
		Male	Female	18-34	35-54	55+	HS or less	Some College	College grad	A lot	A little	Nothing
Good idea	76%	82%	71%	75%	76%	78%	70%	75%	88%	87%	79%	68%
Bad idea	20%	15%	24%	22%	19%	18%	25%	22%	9%	11%	19%	25%
(VOL) Depends	2%	1%	2%	1%	3%	1%	2%	1%	2%	2%	1%	2%
(VOL) Don't know	2%	1%	3%	2%	2%	2%	2%	2%	1%	0%	1%	5%

Machines that monitor and make decisions about the safety operations of a nuclear power plant

	TOTAL	GENDER		AGE			EDUCATION			HEARD OF AI DEVELOPMENTS		
		Male	Female	18-34	35-54	55+	HS or less	Some College	College grad	A lot	A little	Nothing
Good idea	35%	41%	29%	40%	32%	33%	32%	34%	41%	49%	37%	26%
Bad idea	60%	54%	66%	55%	63%	62%	63%	64%	52%	49%	59%	66%
(VOL) Depends	2%	2%	3%	3%	2%	3%	2%	1%	4%	1%	2%	4%
(VOL) Don't know	3%	3%	2%	2%	4%	2%	3%	2%	3%	1%	2%	4%

7. How worried are you that machines with artificial intelligence could eventually pose a threat to the existence of the human race – very, somewhat, not too, or not at all worried?

	TOTAL	GENDER		AGE			EDUCATION			HEARD OF AI DEVELOPMENTS		
		Male	Female	18-34	35-54	55+	HS or less	Some College	College grad	A lot	A little	Nothing
Very worried	16%	12%	20%	14%	18%	18%	22%	18%	7%	19%	14%	19%
Somewhat worried	28%	30%	25%	28%	25%	31%	32%	27%	21%	25%	28%	28%
Not too worried	28%	25%	30%	34%	26%	22%	23%	28%	33%	20%	32%	23%
Not at all worried	27%	31%	23%	23%	30%	27%	21%	25%	38%	35%	25%	27%
(VOL) Don't know	1%	1%	1%	2%	1%	1%	2%	1%	0%	1%	1%	2%

8. Do you own a smartphone or other device with voice recognition technology, such as Apple's Siri or Ok Google?

	TOTAL	GENDER		AGE			EDUCATION			HEARD OF AI DEVELOPMENTS		
		Male	Female	18-34	35-54	55+	HS or less	Some College	College grad	A lot	A little	Nothing
Yes	61%	61%	60%	79%	66%	37%	47%	66%	76%	77%	63%	51%
No	39%	38%	39%	21%	33%	63%	52%	34%	23%	23%	36%	48%
(VOL) Don't know	1%	1%	0%	1%	1%	0%	1%	0%	1%	0%	1%	1%

9. How much do you rely on computers and technology in your daily life – a great deal, some, not much, or not at all?

	TOTAL	GENDER		AGE			EDUCATION			HEARD OF AI DEVELOPMENTS		
		Male	Female	18-34	35-54	55+	HS or less	Some College	College grad	A lot	A little	Nothing
Great deal	37%	37%	38%	43%	42%	26%	26%	38%	54%	55%	40%	27%
Some	32%	30%	33%	36%	33%	27%	29%	36%	31%	27%	35%	29%
Not much	21%	23%	19%	19%	18%	25%	26%	21%	13%	14%	20%	24%
Not at all	10%	10%	10%	1%	7%	22%	19%	5%	1%	3%	6%	19%

The *Monmouth University Poll* was sponsored and conducted by the Monmouth University Polling Institute from March 30 to April 2, 2015 with a national random sample of 1,005 adults age 18 and older. This includes 703 contacted by a live interviewer on a landline telephone and 302 contacted by a live interviewer on a cell phone, in English. Monmouth is responsible for all aspects of the survey design, data weighting and analysis. Final sample is weighted for region, age, education, gender and race based on US Census information. Data collection support provided by Braun Research (field) and SSI (RDD sample). For results based on this sample, one can say with 95% confidence that the error attributable to sampling has a maximum margin of plus or minus 3.1 percentage points (unadjusted for sample design). Sampling error can be larger for sub-groups (see table below). In addition to sampling error, one should bear in mind that question wording and practical difficulties in conducting surveys can introduce error or bias into the findings of opinion polls.

<i>POLL DEMOGRAPHICS (weighted)</i>			
25% Rep	49% Male	32% 18-34	66% White
44% Ind	51% Female	36% 35-54	12% Black
31% Dem		32% 55+	15% Hispanic
			7% Asian/Other

	TOTAL	MARGIN OF ERROR										
		GENDER		AGE			EDUCATION			HEARD OF AI DEVELOPMENTS		
		Male	Female	18-34	35-54	55+	HS or less	Some College	College grad	A lot	A little	Nothing
<i>Unweighted N</i>	1,005	505	500	198	317	486	328	263	410	143	534	325
<i>moe</i>	3.1%	4.4%	4.4%	7.0%	5.5%	4.5%	5.4%	6.1%	4.8%	8.2%	4.3%	5.4%

###