Rare and costly prosocial behaviors are perceived as heroic

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Abstract

Heroism has only recently become a topic of empirical investigation. Existing research suggests a connection between heroism and four well-documented dimensions of human social behavior: 1) the cost incurred by the actor; 2) the benefit provided to the recipient; 3) the perceived frequency (i.e. descriptive normativity); and 4) the perceived expectation to perform it (i.e. injunctive normativity). In a series of exploratory studies (total N=408), we aim to shed light on how each of these constructs influence lay intuitions about the nature of heroism (i.e. what determines which acts people perceive to be heroic). In Study 1, subjects generated a list of acts they deemed to be heroic. In Study 2, subjects rated the heroicness of the acts from Study 1, revealing considerable variation in the level of heroism. Finally, subjects in Study 3 rated the cost of to the actor, the benefit to the recipient(s), the descriptive normativity (i.e. frequency), and the injunctive normativity (i.e. obligatory) of ten acts, five of which received particularly high heroism scores in Study 2 (“exemplary” acts of heroism”) and five of which received particularly low heroism in Study 2 (“ambiguous” acts of heroism). We find that more heroic acts are seen as rarer and more costly to actors – but, interestingly, not more beneficial to recipients or less obligatory. These findings help to illuminate what is means to be seen as a hero, and suggest clear future directions for both empirical and theoretical work.

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Introduction

Heroism is the original topic of literature, dating to some of the earliest known human writing from approximately 2100 BC in the Epic of Gilgamesh. Yet, an empirical understanding of heroism is only just emerging. This research has variously investigated types of heroism (Franco et al., 2011), functions of heroism (Kinsella et al., 2015a), traits of heroes (Goethals and Allison, 2012), characteristics of heroes (Kinsella et al., 2015b), and gender differences among heroes (Becker and Eagly, 2004), as well as amalgams of these approaches (Riches, 2018). Allison et al. (2016) summarize a number of dichotomies made in the literature which try to distinguish between two classes of heroes (e.g. emergent v. sustained; Kraft-Todd and Rand, 2016). In light of this research, an early consensus definition of heroism seems to be taking extraordinary action in service of the greater good with personal risk of significant sacrifice (Allison et al., 2016).

Thus articulated, the burgeoning science of heroism appears to sit squarely between two social science literatures: game theory and social norms. Game theory formalizes strategic decision-making between individuals by quantifying the costs and benefits at stake in an interaction (von Neumann, 1959). This conceptualization allows for a precise definition of cooperation—an individual paying a cost to give another a benefit—which in turn presents a conundrum: why do people cooperate (Rand and Nowak, 2013)? A particularly challenging problem in game theoretic terms is understanding why an individual would pay a cost to give many others a benefit, i.e. contribute to public goods (Hardin, 1968)—a pressing problem shared by policy-makers in the real world (Kraft-Todd et al., 2015). In the language of game theory, then, the risk of sacrifice in heroism implies a potentially large cost paid by an actor in order to cooperate or contribute to the public good. Heroism thus may be understood as a special case of cooperation in which the actor incurs (or at least risks) a large cost (akin to extreme altruism; Marsh et al., 2014; Epstein et al., 2016). Further, there is good reason to believe that assessment of the costs and benefits might be relevant to our perception of heroism. Adults and children use information about the costs and benefits of others’ behaviors to make inferences about their character (Jara-Ettinger et al., 2016). As young as two years, these evaluations affect our preferences for interacting with others (Jara-Ettinger et al., 2015). Thus, ascriptions of heroism may rely on beliefs about the costs and benefits of an actor’s behavior.

Social norms are “rules and standards that are understood by member of a group, and that guide and/or constrain social behavior without the force of laws” (Cialdini and Trost, 1998). Two types of social norms are frequently distinguished: descriptive norms, which are about what people think others do; and injunctive norms, which are about what people believe others think they should do. Colloquially, our conception of what is “normal” lies somewhere between our conception of what is descriptively and injunctively normative (Bear and Knobe, 2016). In the language of social norms, then, the extraordinary action that defines heroism is descriptively non-normative (i.e. rare).

Conceptually situated within this overlap of game theory and social norms, four quantifiable dimensions of social perception may help elucidate a clearer empirical understanding of heroic behavior: 1) the cost to the actor; 2) the benefit to the recipient(s); 3) the descriptive normativity of the behavior; and 4) the injunctive normativity of the behavior. In a series of exploratory studies (total N=408), we aim to discover the extent to which these constructs influence people’s perceptions (i.e. lay intuitions) of heroism.

Intuitively, it seems likely that the more a behavior is thought to be heroic, the greater would be the perceived cost to the actor and benefit to the recipient, while the lower would be
the descriptive and injunctive normativity of the behavior. We use a “ground-up” approach to the concept of heroism, avoiding a priori assumptions about what “counts” as heroism (similar to the method of Kinsella et al., 2015a). In Study 1, we therefore ask subjects to generate acts of heroism. In Study 2, we ask a separate group of subjects to rate the extent to which these candidate behaviors are heroic. Finally, in Study 3, we ask yet another group of subjects to rate the extent to which a subset of these candidate behaviors are costly to the actor, beneficial to the recipient, descriptively normative, and injunctively normative.

Study 1: Subject-generated acts of heroism

Material and Methods

We recruited 102 subjects from the online labor market Amazon Mechanical Turk (mTurk; Horton et al., 2011; Arechar et al., 2017). We did not collect standard demographics such as age and gender, though previous research has shown that this population is more representative than typical student samples (Berinsky et al., 2012), if not representative of the national population (Paolacci and Chandler, 2014). Subjects completed the study in $m=5$ minutes and were paid $0.50 for their participation, commensurate with typical rates on this platform. We prevented subjects from participating repeatedly (both within each study across studies) by excluding duplicate Amazon worker IDs and IP addresses. Our pre-study procedure (in this and following studies) was to ask subjects to provide their mTurk IDs and transcribe a sentence of difficult-to-read handwritten text (the latter to prevent bot participation and discourage low-effort workers). For Study 1, subjects simply responded to the prompt: “Please name at least 3 and up to 10 real-life acts of heroism” using free-response text boxes.

Data analysis for all studies was completed using STATA 13. Informed consent in all studies was obtained from all subjects and was approved by Yale University’s Institutional Review Boards protocol 1307012383.

Results and Discussion

Subjects generated on average $m=4.2$ responses, which were edited for responses which did not answer the question (often because they were the wrong part of speech, e.g. “boldness”, “Jon Meis”) repeated answers (within subjects), spelling, punctuation, and grammar (see SI Table 1 for complete list of unedited responses). Responses were further edited for simplicity (e.g. generalizing pronouns such as “woman” and “man” to “person”) and semantic commonality (“Entering a burning building to save some one” and “Going into a burning building to rescue people”), yielding a list of 80 unique responses (see Table 1). It is worth noting that nearly all behaviors are explicitly prosocial in nature (e.g. contain “saving”, “rescuing”, “donating”, “protecting”, etc.).
Table 1. Edited list of all candidate acts of heroism used as stimuli in Study 2 (80 total).

Raw responses from Study 1 (428 total; see SI Table 1) were edited according to which did not answer the question, repeated answers (within subjects), spelling, punctuation, grammar, simplicity, and semantic commonality.

Study 1 therefore provided us with a list of potentially heroic behaviors. The purpose of Study 2, then, was to assess lay intuitions about how heroic each of these behaviors is perceived to be.

Study 2: Validating candidate acts of heroism

Material and Methods

We recruited 205 subjects from mTurk who did not participate in Study 1. Subjects completed the study in $m=3$ minutes and were paid $0.50$ for their participation. Following the same pre-study procedure as in Study 1, subjects rated a randomly selected subset of 20 candidate acts of heroism from the 80 generated in Study 1 (presented in randomized order) on
how heroic they were using two scales (also presented in randomized order): a binary measure of whether the candidate behavior qualified as “Heroic” (1) or “Not heroic” (0), and a continuous measure of the extent to which the candidate behavior was heroic (Likert scale, 1: “Not at all heroic” – 7: “Very heroic”). Thus \(m=51\) subjects rated each candidate behavior using both of these scales. These measures were strongly and significantly correlated (\(r=.95, p<.001\)), so we use the binary measure for ease of exposition, though analyses are robust to using either measure (see SI Figure 3 for results of Study 3 using the continuous measure).

Results and Discussion

Across all 80 candidate behaviors, the median percentage of subjects classifying the behaviors as “heroic” was 82% (\(m=75\%\); see Figure 1). Thus, subjects from Study 1 appear to have done a satisfactory job of nominating candidate acts of heroism. Critically, however, there was also substantial variation across behaviors in their level of heroism.

Fig 1. Candidate acts of heroism generated by subjects were broadly (examples in red) or ambiguously (examples in yellow) considered heroic by a separate sample. Shown is a scatterplot of the proportion of subjects rating each of 80 candidate behaviors as “Heroic” (1) or “Not heroic” (0) ranked from most to least heroic. (X-axis represents dummy values for act of heroism.)

The goal of Study 3, then, was to understand what explains this variation in heroicness. To do so, we selected ten acts of heroism to investigate in more detail (see Figure 1 legend). We selected five “exemplary” acts of heroism that demonstrated wide consensus on being perceived as heroic (proportion classifying behavior as heroic >.9) and five “ambiguous” acts of heroism that were not strongly perceived as heroic or not heroic (proportion classifying behavior as heroic =.4-.6). In selecting these behaviors, we focused on behaviors that were frequently discussed in the contexts of cooperation, prosociality, and heroism; and that were specific, rather than sustained, behaviors (with the exception of “raising your child well”).
Study 3: What distinguishes acts perceived as more heroic?

Material and Methods

We recruited 101 subjects from mTurk who completed the study in $m=5$ minutes and were paid $0.50 for their participation. Following the same pre-study procedure as in Study 1, subjects rated each of the 5 “exemplary” and each of the 5 “ambiguous” heroism behaviors on descriptive normativity (“In your opinion, how many people in your community do this behavior?”), injunctive normativity (“In your opinion, how much do people in your community think doing this behavior is what you are supposed to do?”), benefit to the recipient (“In your opinion, how much benefit (in terms of money, time, effort, etc.) does the recipient of this behavior receive?”), and cost to the actor (“In your opinion, how much cost (in terms of money, time, effort, etc.) does the person who does this behavior incur?”). The 10 behaviors were presented in randomized order and ratings (also presented in randomized order) were completed using sliding scales which ranged from 0 “Very little” to 100 “Very much”.

Results and Discussion

First, we investigate the pairwise correlations among our dependent variables (Table 2; Pearson’s correlation coefficient, p-values Bonferroni corrected for 6 simultaneous comparisons). Though we observe many significant correlations, they are sufficiently low that it is reasonable to investigate the relationship between heroism and all dependent variables simultaneously in a single model.

|              | Descriptive normativity | Injunctive normativity | Benefit | Cost |
|--------------|-------------------------|------------------------|---------|------|
| Descriptive  | x                       |                        |         |      |
| normativity  |                         |                        |         |      |
| Injunctive   |                         | 0.45***                |         |      |
| normativity  |                         | x                      |         |      |
| Benefit      | 0.11**                  |                        | 0.27*** | x    |
| Cost         | -0.02                   | 0.11**                 | 0.27*** | x    |

Table 2. Our dependent variables are significantly, though weakly correlated.

Therefore, we investigate differences in perceived heroism based on these four dimensions using OLS regression with proportion of Study 2 participants indicating the behavior was heroic (standardized) as the dependent variable, and (standardized) ratings of costliness, benefit, descriptive normativity, and injunctive normativity as independent variables, clustering standard errors on subject (regression coefficients plotted in see Figure 3; see SI Figure 1 for a plot of raw means and SI Figure 2 for distributions). More heroic acts were perceived as less descriptively normative ($b=-.31, 95\% \text{ CI } [-.37, -.24], t(101)=-9.64, p<.001$) and more costly to the actor ($b=.12, 95\% \text{ CI } [.06, .19], t(101)=3.85, p<.001$). However, the heroicism of the acts was not significantly related to perceived injunctive normativity ($b=.01, 95\% \text{ CI } [-.05, .06]$).
...nor perceived benefit to the recipient \( (b=-3.27e-4, 95\% \text{ CI } [-.05, .05], \)
\( t(101)=-.01, p=.990) \).

![Bar chart showing change in perceived heroicness by 1 SD of predictor](chart.png)

**Fig 3. More heroic acts are seen as rarer and more costly to actors (though not more beneficial to recipients or less obligatory) than ambiguous acts of heroism.** Shown are standardized coefficients (with 95% CIs) of subjects’ ratings on four measures (0-100 slider scales) predicting the heroicness of the acts as measured on a binary scale (from Study 2).

**General Discussion**

Situating an empirical approach to heroism within the game theory and social norms literatures, we conducted three exploratory studies (total \( N=408 \)) on lay intuitions of heroic acts. We find that acts which are widely agreed upon as being heroic (exemplary heroism) can be distinguished from acts whose heroicness is unclear (ambiguous heroism), with exemplary acts having lower descriptive normativity and higher costliness to the actor—but **not** differential injunctive normativity nor benefit to the recipient. These results extend prior work on heroism by providing empirical evidence supporting the conceptual link between the emerging science of heroism and more established fields in the social sciences, while also clarifying the lay definition of heroism.

Our approach avoids being bound by academic preconceptions of heroism by utilizing subject-generated acts of heroism as our stimuli (Study 1, in which we asked, “Please name at least 3 and up to 10 real-life acts of heroism”) in subsequent studies. Though a few empirical studies of heroism employ this method, these investigate other aspects of heroism: e.g. “In your view, what functions do heroes serve?” (Kinsella et al., 2015a) and “What are the features that you associate with heroes and their heroic actions?” (Kinsella et al., 2015b). We believe a comprehensive understanding of heroism will be achieved by exploring various means of eliciting lay perceptions of heroism and finding consensus among them.

One major limitation to our investigation is the extent to which our results depend on the specific ten behaviors from Study 2 we chose to serve as stimuli in Study 3. Future research should test the robustness of our conclusions to the consideration of a wider range of heroic acts, and perhaps conduct additional pretesting to ensure candidate acts of heroism do not differ on dimensions (e.g. familiarity) which might affect variables of interest. In particular, the inclusion
of candidate acts of heroism with intermediate values of the proportion of people considering them heroic (compared to relative extremes we investigate here)—and the inclusion of acts considered distinctly non-heroic—may shed further light on the relation of perceived heroism and our variables of interest. Finally, our investigation was exploratory, so replication and confirmatory studies should be conducted to provide greater faith in our findings and their interpretation.

We found the observation that exemplary acts of heroism were not perceived as more beneficial to recipients than ambiguous acts of heroism to be surprising, given our intuition that helping others is part of what makes an act heroic (e.g. “a person jumping on a grenade to save fellow soldiers” $m=69.08$ 95% CI [62.51, 75.65] v. “volunteering at a soup kitchen” $m=65.84$, 95% CI [60.53, 71.16], $t(200)=.76$, $p=.45$). The within-subjects design of Study 3 grants additional credence to this observation: each subject rated all ten of the heroic acts, and so presumably they could have compared one situation to the next and made these judgments relative to each other. Yet, the finding that benefit to the recipient is not related to the extent to which a behavior is perceived to be heroic interestingly coincides with other empirical findings.

In charitable giving, the “effective altruism” movement aims to direct giving toward more socially efficient causes—i.e. get more bang for the donor’s buck—yet effectiveness information often does not motivate greater giving (Berman et al., 2018). This finding is an example of the broader phenomenon of scope insensitivity (Carson, 1997), in which people do not exhibit greater valuation for increased amounts of an economic good. Scope insensitivity has been repeatedly demonstrated in the domain of prosociality (Desvousges et al., 1993; Hsee and Rottenstreich, 2004; Small et al., 2007). Thus, our findings are in a sense the converse: while previous research has shown that people do not value (via monetary donations) causes which provide a greater benefit to others, we show that people do not perceive a greater benefit to others from behaviors that are more valued (via judgments of heroism). Further, and more relevant to the characterological judgment nature of heroism, this (non)relation of social benefit to valuation is consistent with findings that people do not prefer consequentialist agents who are willing to inflict harm to provide a greater social benefit (Everett et al., 2018).

Our finding that judgments of heroism are linked to the cost to the actor but not the benefit to the recipient suggests numerous questions regarding the proximate mechanism of heroism perception. First, when a decision-maker is attempting to distinguish whether another’s behavior is heroic or not, it could be that the costs to the actor are more salient than the benefits to the recipient if this judgment is accomplished via imagining what it is like to be in the actor’s shoes (rather than the recipient’s). For example, it could be that when you are trying to decide whether “entering a burning building to save someone” is heroic or not, you engage in perspective-taking not with the person who might be saved, but with the person entering the burning building. Second, it could be that the costs of heroism are simply more observable than the benefits because calculating the latter requires an extra step of contrapositive reasoning: i.e. it requires knowing what would have happened if the hero had not intervened. For example, when a child stands up for another child being bullied, we know that child steps in the way of the bully’s fists, but we don’t know whether the bully would have broken the victim’s nose or just taken their lunch money.

Our finding that judgments of heroism are linked to the descriptive normativity of the action but not the injunctive normativity was also surprising to us, as our intuition was that “going above and beyond” was an important part of being seen as heroic. Our data indicate, however, that this is not the case. Many of the proposed acts of heroism in Study 1 included
professions where taking risks to help others is part of the job expectations (e.g. military, firefighter; see Table 1 and SI Table 1). Thus, for these people acting heroically may not be unexpected (i.e. is injunctively normative), but it still may be rare (i.e. is descriptively non-normative). The fact that such actions were still judged to be heroic indicates that unexpectedness (or injunctive normativity) does not appear to be a crucial component of lay perceptions of heroism.

Heroism, understood as rare (i.e. non-normative) and costly cooperation is a particularly timely concept to understand as the need to promote innovative solutions to global social challenges becomes increasingly clear (Kraft-Todd et al., in press). We hope our conceptualization of heroism can help connect the emerging science to such pressing real-world issues. Heroism needn’t be confined to our cultural mythologies (Campbell, 1949/2008); we may even more effectively encourage it if we celebrate it in our science as well as our stories.

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**SI Table 1. Raw responses of candidate acts of heroism from Study 1 (428 total).**

| Raw response                                                                 | 1. Doing what?                                                                 | 2. Act?                                                                 |
|-----------------------------------------------------------------------------|-------------------------------------------------------------------------------|-----------------|
| A ballet dancer jumped onto subway tracks to lift a man to safety.          | Going to get your fellow soldier who is wounded under enemy fire               | Rushing into a fire |
| A boy is pulled from beneath a collapsed wall at the Plaza Towers Elementary School | Great teachers who could have been anything but chose to dedicate their lives to the future | Sacrifice |
| a dog fighting off a wild animal to save his or her owner                    | Harvey Randolph                                                              | sacrifice oneself |
| A French philosopher who praised risk-taking died while saving drowning children. | Harvey Randolph                                                              | Sacrificing for your children. |
| A homeless man aided children wounded in a terrorist attack in England.      | Having courage to achieve good things                                          | Sacrificing self for others |
| A man helping his wife deliver their child                                  | Hazardous occupations                                                        | sacrificing your life to save another |
| A man jumping on a grenade to save his fellow soldiers                       | help someone grab something from a high shelf                                 | Sacrificing yourself so another may live. |
| a man shielded his wife during a shooting                                    | helping a choking victim                                                      | Safely landing a passenger plane with no landing gear |
| A parent giving up own life to save a family member.                         | helping a friend                                                              | save someone from a burning building |
| a woman saved a girl from being kidnapped by pretending to be her mother     | helping an elderly person                                                     | saves others |
| A woman who overcame a tough childhood adopted and raised three foster children on her own. | Helping at a car accident                                                     | Saving a baby |
| act of bravery                                                                | Helping elderly people.                                                       | saving a cat from a tree |
| Admitting mistakes                                                            | helping homeless                                                              | Saving a cat’s life. |
| adopting a child in a terrible situation                                     | Helping less fortunate people                                                 | saving a child from a burning building |
| Adopting a child in need.                                                    | Helping others                                                                | saving a child from a kidnapper |
| Adopting or taking care of a foster child                                    | helping out at an animal shelter                                              | saving a child from danger |
| Adoption                                                                     | helping people escape a fire                                                  | SAVING A CHILD FROM DROWNING. |
| Adoption                                                                     | Helping someone after a traumatic event                                       | Saving a child from fire |
| Affection                                                                    | Helping someone after an accident                                            | Saving a child's life. |
| Alek Skarlatos                                                               | Helping someone get from a abusive situation.                                 | saving a dog from a hard life |
| all of the first responders during 911                                       | Helping someone in need                                                       | saving a dog from a hot car |
| always having extra tampons if someone needs them                            | hero                                                                          | Saving a dog’s life. |
| American soldiers in battle                                                  | Holding open a door so children can escape from oncoming fire                 | Saving a drowning person |
| An illustrator from Colombia jumped onto subway tracks to help a homeless man who had fallen. | Holding the hand of a hospice patient                                         | saving a drowning person |
| An usher confronted a gunman who opened fire at a church in Tennessee.       | Hollywood Bank Heist Shootout                                                 | Saving a family from a fire. |
| Angela Pierce                                                                | Inmate firefighters prepare to battle the Rim Fire near Yosemite National Park, California | Saving a friend from an accident |
| Angela Pierce                                                                | inspiration                                                                   | saving a kitten from a burning building |

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anyone standing up for what’s good and kind
Assisting the elderly
becoming a firefighter or policeman
Being a firefighter
Being a police officer
Being a good parent
Being a really good friend for someone with depression
Being in a search party
Being kind to others.
Being selfless
brave
Bravery
Bringing food or medicine to the elderly or handicapped
bringing someone food
Bystanders dragging driver out of burning car.
Cancer patients fighting for their lives.
carrying
catching a baby
catching a robber
child standing up for someone being bullied
Childbirth
Children with cancer
climbing a tree to rescue a pet
Coast Guard
Colton Haab from Parkland High
confronting an abusive spouse
Conscientious objectors.
Courage
courage
covering your loved ones with your body as a tornado hits your home
Crew men restoring power in the middle of a major storm during the weekend nor’ester
danger
Intervening when it’s uncomfortable
investigating someone for conspiracy
Jeremy Wuitschick And Johnny Wood
Jeremy Wuitschick And Johnny Wood
Jeremy Wuitschick And Johnny Wood
Jim Gard from Parkland High job
joining armed forces
Joining the military
joining the military
Jon Meis
Jon Meis
jumping in front of someone to take a bullet for them
jumping into dangerous waters to save someone drowning
Jumping into the water to save a drowning person.
Jumping on train tracks to save fallen person.
Keenia Williams
Keenia Williams
Keeping others calm in the face of danger
Kyle Carpenter
Lauren Prezioso
Lauren Prezioso
leadership
leaving a negative situation to better everyone
Lending an ear to help comfort someone.
Lewis Thomas
Lewis Thomas
Life sacrifice for the benefit of others.
Lifeguard jumping in to save someone drowning
love
Man throws himself in front of active shooter to save children.
Man thwarts a would-be rapist.
saving a life
Saving a life.
Saving a person from a burning building
Saving a person from a fire
saving a person from drowning
saving a person’s life
Saving a person’s life.
Saving a pet from a rescue center
Saving an animal’s life
SAVING CHILD FROM BURNING BUILDING
saving hostages
saving lives in a storm
saving people out of a burning building
saving someone drowning
Saving someone from a burning building
Saving someone from a burning building
Saving someone from a burning building.
saving someone from a burning car
Saving someone from a fire
Saving someone from a fire
saving someone from a fire
Saving someone from a heart attack
Saving someone from a house fire
saving someone from a kidnapper
Saving someone from being raped or mugged.
saving someone from burning building
saving someone from drowning
saving someone from drowning
saving someone from drowning
saving someone from drowning
saving someone in a combat situation
saving someone who is choking
saving someone who is choking
Daniel Konzelman helped the injured out of a derailed Amtrak train.
Defending an innocent person
Defending someone from abusive authority figures.
Defending someone from harm.
Doctor
Doctors and nurses calmly did their jobs after a gunman stormed the hospital where they work.
dodging in front of a bullet to save another person.
Donating a kidney.
Donating an organ
donating blood
donating blood
donating food to a poor family
Donating money to a needed cause
Donating new clothes or food
donating organs
donating organs or bone marrow
Donating organs to a stranger or loved one
donating to cancer patients
donating to charity
Donating to charity
Donations to charity
Driving safely
Dying in the line of fire (military)
emt’s
emts saving a persons life
Entering a burning building to save someone.
Entering a burning building to save someone

marines enlisting and going to falujia
Martin Luther King
Martin Luther King
Martin Luther King Jr. fighting for black rights
Members of the military
Military members going into combat for America.
Military service
Miracle on the Hudson
Moments of hope and inspiration rose above the chaos of Hurricanes Harvey and Irma.
Mother Teresa's entire life
MY husband staying up all night making sure my dad's oxygen tank didn't run out
Nelson Mandela
nelson mandela knowingly stayed in jail for a crime he didn't commit
Paramedics
Paramedics seeing terrible things but still helping
paying off a school district's lunch money debt
people on a flight crashed the plane so the terrorists wouldn't fly it into a building
People that jump into rivers to save other people
performing CPR
performing cpr
Performing open heart surgery.
performing the heimlich maneuver
Persons trying to rescue passengers from airplane downed in water.
playing it forward buying someone else a coffee
police catching criminals
Police going into domestic violence situations.
Police Officer risking her life each shift
police officer risking their life to save others
Police officers
Police officers

saving someone who is drowning
Saving someone's life
saving someone's life
Saving someone's life
saving someones life in any manner
saving someone's life when it is not your job
Schindler saving Jews
Search and rescue by sea
Selflessness
serving in the army
serving in the military
Serving in the military for your country
Shielding a person from gunfire
shooting an active shooter
Soldiers
soldiers going in to protect civilians
someone donating a kidney to someone
someone going into a burning building to rescue someone
Someone performing CPR
someone pushing someone from the path of an on coming car
someone running into a burning building to savesomeone
Someone stepping in front of a bullet meant for another
Someone stopping a robbery or something similar by physically stopping the person.
Standing up for a friend against a bully
standing up for black rights
standing up for equal rights
standing up for LGBT rights
Standing up for what what is right
facing your fears for progression
feeding a homeless person
Feeding the homeless.
Feeding the poor & needy
Feeding those who are unable to feed themselves.
Female inmates in California signed up to fight wild fires, at times risking their lives.
Fighting an hostile force
Fighting for our country
Fighting for rights and equality of groups of people.
Fighting for the rights of others
Fighting for your country.
Fighting in a war
Fighting in the military
fighting off intruders
finding a murder suspect
Fire Rescue
Fire rescue
Firefighter going into a burning building
Firefighters
Firefighters at 9/11
Firefighters climbing into the Twin Towers.
Firefighters entering WTC 2 on 9/11
firefighters fighting fires
Firefighters going into a burning building to save someone.
Firefighters going into burning buildings.
Firefighters on 9/11
firefighters risked their lives to save those trapped in the rubble of 9/11
firefighters rushing into burning buildings to help others
firefighters saving people in burning buildings
fire-fighting
Police officers confronting a shooter.
Police officers putting their lives on the line.
Police officers standing someone down who is threatening someone with a weapon.
Police patrolling the streets
Policeman
Preventing someone from committing suicide
Protecting children in a school shooting.
protecting people in immediate danger
protecting someone being shot at
Protesting injustice
providing cpr to someone in need
Providing CPR to someone who is unresponsive.
pull someone from traffic
pulling a car from someone
Pulling a child from a burning building
Pulling someone from a fire.
Pushing a person out of the path of a speeding car
Pushing someone away from oncoming car
Putting out a fire
quick-thinking in a dangerous situation
raising your child right
Report crime to police
rescue kid from fire
Rescue of people on 9/11
Rescue workers carry a child who was rescued from the rubble at the site of a collapsed residential building in Mumbai, India
rescueing a child from a fire
rescueing a drowning victim
Standing up for what's right.
standing up to a bully
Standing up to a bully
standing up to a bully
standing up to politicians
stepping up to crime leaders
stopping or catching a child abductor
Stopping a bomb
Stopping a gunman
Stopping a murderer
Stopping a robbery.
Stopping a shooter.
Stopping a thief
Stopping an assault
stopping and helping in an automobile accident.
stranger providing cpr to a victim
Subway Rescue
sully sullivan saving the people on the plane
taking a bullet for someone
taking a bullet for someone
Taking a bullet to save another
taking action against inequalities and unfairness
taking care of someone
talking someone out of suicide
Talking someone out of suicide.
Teacher jumping in front of shooter to save students in Florida school shooting
Teachers shielding kids from an active shooter.
Teachers teaching every day
Teaching children
Teenage girls in Nigeria, kidnapped by Boko Haram and strapped to suicide vests, managed to escape and tell their stories.

Temar Boggs And Chris Garcia

Temar Boggs and Chris Garcia chased after an abductor until he let his captive go.

The 9/11 firefighters.

The president going to war zones to support troops

The President going to work with bullet proof vest.

The relief workers cleaning up after a natural disaster

Treating everyone as equals

Two teenage boys are being hailed as heroes after they chased a car carrying a kidnapped girl on their bicycles.

volunteering

Volunteering as an EMT

volunteering at a soup kitchen

Volunteering at a soup kitchen

Volunteering your free time to those in need

Washington crossing the Delaware

Whistle-blowers.

Workers going into radioactive nuclear factory in Japan

Working overseas for charity

working with disadvantaged youths

young child protecting mother from abuse
SI Figure 1. Exemplary acts of heroism are seen as rarer and more costly to actors (though not more beneficial to recipients) than ambiguous acts of heroism. Shown are means (with 95% CIs) of subjects’ ratings on four measures (0-100 slider scales; see SI Fig. 2 for distributions) aggregated over the 5 exemplary and 5 ambiguous acts of heroism.
SI Figure 2. Subjects’ perceptions of exemplary v. ambiguous acts of heroism. Shown are distributions of subjects’ ratings on four measures (0-100 slider scales): (a) descriptive normativity (“In your opinion, how many people in your community do this behavior?”); (b) injunctive normativity (“In your opinion, how much do people in your community think doing this behavior is what you are supposed to do?”); (c) benefit to the recipient (“In your opinion, how much benefit (in terms of money, time, effort, etc.) does the recipient of this behavior receive?”); and (d) cost to the actor (“In your opinion, how much cost (in terms of money, time, effort, etc.) does the person who does this behavior incur?”).
SI Figure 3. More heroic acts are seen as rarer and more costly to actors (though not more beneficial to recipients nor less obligatory) than ambiguous acts of heroism. Shown are standardized coefficients (with 95% CIs) of subjects’ ratings on four measures (0-100 slider scales) predicting the heroicness of the acts as measured on a continuous scale (from Study 2).