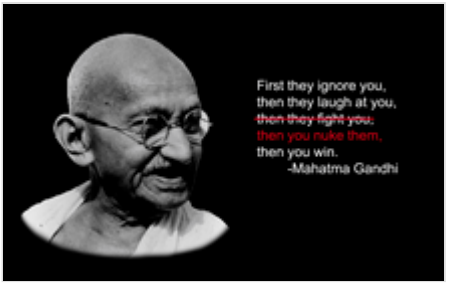
Nuclear Gandhi

Nuclear Gandhi is a video game urban legend purporting the existence of a software bug in the 1991 strategy video game *Civilization* that would eventually force the pacifist leader Mahatma Gandhi to become extremely aggressive and make heavy use of nuclear weapons. The claim was mentioned on the TV Tropes wiki in 2012, and continued until 2020, when the series' creator, Sid Meier, confirmed that the bug would have been impossible in the original game.[1] Gandhi was programmed to exhibit this behavior in *Civilization V*, released in 2010, and it is unclear whether this led to the belief that the behavior had also been present in earlier games.



An example of Nuclear Gandhi as an Internet meme

While fictional, Nuclear Gandhi is one of the most recognizable video game glitches and has been used as an example of integer overflow in computer science, and was included as an Easter egg in other games in the *Civilization* series.

Background

According to the legend, each leader's game AI in *Civilization* had a parameter that described their aggression on a scale from 1 to 10, with 1 being least aggressive and 10 most aggressive.[2][3] Other sources say the scale went from 1 to 12.[4] Indian leader Mahatma Gandhi was the only leader in the game with the lowest possible aggression rating of 1[5] and, as a result, was only able to wage defensive wars.[6] Once the AI changed its government form to democracy, which was preferred by peaceful nations such as India,[3] its aggression level decreased by 2. In the case of Gandhi, this would lead to an aggression level of −1.[7]

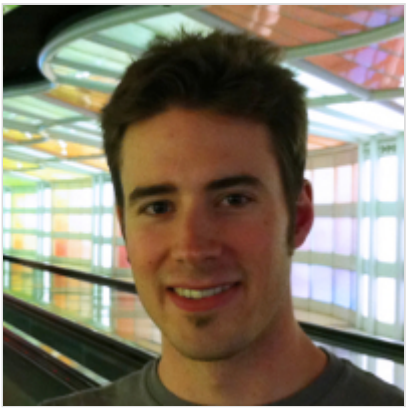
According to the legend, the aggression level was stored as an 8-bit unsigned integer variable that could only store values in the range from 0 to 255 (or $2^8 - 1$), and the negative value would therefore result in an integer overflow, with the value being stored as 255[7] and Gandhi supposedly becoming about 25 times more aggressive than the most aggressive leaders in the game.[6] In *Civilization*'s technology tree, nuclear weapons are generally unlocked only after democracy, so Gandhi's aggression level would have already spiked by the time India became nuclear-capable. This led to India suddenly attacking other civilizations with nuclear missiles.[2] Some versions of the story say that the bug was fixed in later versions of the game,[8] others the developers were so amused by it that they deliberately re-implemented as an Easter egg.[2][9][8] Some versions of the story claim that the bug first appeared in *Civilization II*.[4]

In reality, according to the *Civilization II* lead game designer Brian Reynolds, there were only three possible aggression levels in *Civilization*, and even though Gandhi's AI had the lowest possible aggression level, he shared it with one third of all leaders. Additionally, based on his memories of *Civilization*'s source code, Reynolds stated that there was no unsigned variable in this section of code and that leaders could not act more aggressively than the most aggressive leaders of the game. A leader with

an aggression level of 255 would act the same way as a leader with an aggression level of 3.[10] According to Sid Meier, since all integer variables are signed by default in both C and C++ (the programming languages of *Civilization* and *Civilization II* respectively), overflow would not have occurred if Gandhi's aggression were set to −1; moreover, the government form does not affect AI aggressiveness at all, so Gandhi's aggression level remained the same throughout the game.[4] During wars, India could use nuclear weapons just like any other civilization, but Gandhi would not use nuclear weapons more often than Abraham Lincoln or any other peaceful leaders.[3][4][10] One possible origin of the legend could be India's tendency to discover nuclear technology before most of its opponents because of the peaceful scientific nature of this civilization.[10][4] Reynolds noted that all leaders in the game become "pretty ornery" after their acquisition of nuclear weapons, and suggested that this behavior simply seemed more surprising and memorable when it happened to Gandhi.[10]

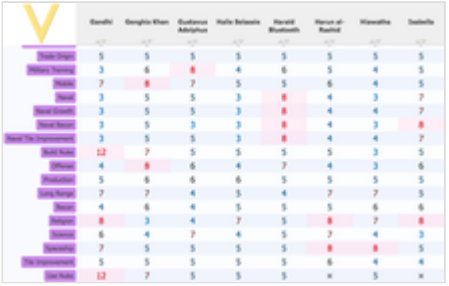
Appearances

Through *Civilization IV*, a popular misconception held that Gandhi was "still" programmed with a tendency to use nuclear weapons as an Easter egg, but no such behavior was purposely added to the games by Firaxis. The first such intentional inclusion of Nuclear Gandhi was in *Civilization V*. *Civilization V* lead game designer Jon Shafer set Gandhi's "Build Nuke" and "Use Nuke" parameters to the highest possible value, 12. Shafer said that he did this as a joke: "it's fun to imagine that an Indian politician promoting Satyagraha may have a desire to nuke his neighbors". Following the game's release in 2010, players noticed Gandhi's incongruous behavior; it was addressed in *The Escapist* magazine's comic *Critical Miss*. Players nicknamed *Civilization V*'s Gandhi "Thermonuclear," "The destroyer of worlds," and "Kurchatov."[11]



Jon Shafer made Gandhi a nuclear weapon enthusiast in *Civilization V*.

Gandhi is actually one of the most peaceful leaders in *Civilization V*, but his artificial intelligence parameters that control building and using of nuclear weapons have the value of 12, which is the highest of any leader. The next three leaders have a value of 8, and most leaders have a value between 4 and 6.[7] To bring more diversity to the gameplay, at the start of each game, *Civilization V* adjusts these parameters by adding a random value between −2 and +2 to each of these two values; in the case of Gandhi, this means the "Build Nuke" and "Use Nuke" parameters will never go lower than the maximum rating: 10 out of 10.[12]



An artificial intelligence configuration of *Civilization V*. Gandhi's high values of "Build Nuke" and "Use Nuke" favors are clearly visible.

Civilization VI introduced a secret agenda mechanic that regulates the artificial intelligence behavior. Each leader has two agendas: the first is constant and based on each leader's personal history, and the second one (as well as a third one in *Civilization VI: Gathering Storm*) is chosen randomly at the start of each game. Gandhi's fixed goal is "Peacekeeper": Gandhi is much less likely to start wars, and disdains civilizations that do, as well as

appreciating those that do the opposite. However, he has a fixed 70% probability of getting "Nuke Happy" as his secondary agenda, which causes him to focus on building nukes, appreciate civilizations that do, and disdain civilizations that do not.[13][14]

Urban legend

In 2012, 21 years after the original *Civilization* was released, the TV Tropes page for *Civilization* was edited by user Tunafish to add a claim that a software bug caused Gandhi to act much more aggressively, but did not include any proof for the claim.[15][4][3] In November, the same information was added to Wikia.[4] According to Sid Meier, over the next two years, the story spread across the Internet, and each time someone doubted it, a link to a wiki was used as a proof.[3]

In 2014, the story gained publicity after a reposted *Critical Miss* comic caused a discussion in the comment section on Reddit over why Gandhi was made that aggressive.[3] Ten days later, the video game news website *Kotaku* posted the article "Why Gandhi Is Such An Asshole In Civilization",[7] which prompted other news websites and blogs to republish the information.[3][4] Soon, "Nuclear Gandhi" became a common video game Internet meme and joke.[3] Moreover, as the "Nuclear Gandhi" meme spread, many people remembered that they were particularly annoyed by India in the first games of *Civilization* series, a false memory attributable to the Mandela effect.[3] Information about "Nuclear Gandhi" was later added to *Know Your Meme*, which stated that the bug first appeared in *Civilization II*.[4]

On June 18, 2019, Firaxis marketing manager Kevin Schultz posted a tweet stating that he was going offline for two weeks due to a business trip to China, and offered to reflect on the question, "What if the widely shared and reposted story about Gandhi's love for nukes in the original *Civilization* being caused by a bug is totally false?" This prompted ex-*Eurogamer* columnist Chris Bratt to start a journalistic investigation.[6]

Bratt contacted 2K's PR department and asked for an interview with a Firaxis representative, but his request was denied. Bratt then contacted ex-Firaxis game designer Bruce Shelley, who stated that he did not remember whether the glitch existed, since the development of *Civilization* was 30 years ago: "I vaguely remember an issue with Gandhi, but the guy you would have to speak with is Sid [Meier]." The next person Bratt contacted was lead *Civilization II* game designer Brian Reynolds, who replied: "Although it's been ~20 years since I've seen the Civ 1 code, I can still tell you with 99.99% certainty the Gandhi bug is completely apocryphal." Bratt contacted 2K and Sid Meier once again but did not receive a direct refutation. Meier stated that he did not know the correct answer, but he thinks that the urban legend is a good thing: "given the limited technology of the time, the original Civ was in many ways a game that took place mainly in players' imaginations", so "I'd be reluctant to limit what that player can imagine by introducing too many of my thoughts". Bratt posted a YouTube video with his investigation's findings.[10] Later, in an *Ars Technica* interview, Sid Meier similarly stated that the bug was possible, "but it was not intentional".[16]

Emu War

The **Emu War** (or **Great Emu War**)[2] was a nuisance wildlife management military operation undertaken in Australia over the later part of 1932 to address public concern over the number of emus, a large flightless bird indigenous to Australia, said to be destroying crops in the Campion district within the Wheatbelt of Western Australia. The unsuccessful attempts to curb the emu population employed Royal Australian Artillery soldiers armed with Lewis guns—leading the media to adopt the name "Emu War" when referring to the incident. Although many birds were killed, the emu population persisted and continued to cause crop destruction.

Emu War

A man holding an emu killed by Australian soldiers

Location	Campion district, Western Australia
Planned by	Sir George Pearce
Objective	Reduce the local emu population
Date	2 November – 10 December 1932 (1 month, 1 week and 1 day)
Executed by	Australian Army, led by Major Gwynydd Purves Wynne-Aubrey Meredith of the Royal Australian Artillery
Outcome	986 emus confirmed killed.[1] Minimal impact on the overall emu population.

Background

Fallow caused by emus

Following World War I, large numbers of discharged veterans who served in the war were given land by the Australian government to take up farming within Western Australia, often in agriculturally marginal areas. With the onset of the Great Depression in 1929, these farmers were encouraged to increase their wheat crops, with the government promising—and failing to deliver—assistance in the form of subsidies. Because of the recommendations and the promised subsidies, wheat prices continued to fall, and by October 1932 the situation intensified, with the farmers preparing to harvest the season's crop while simultaneously threatening to refuse to deliver the wheat.[1]

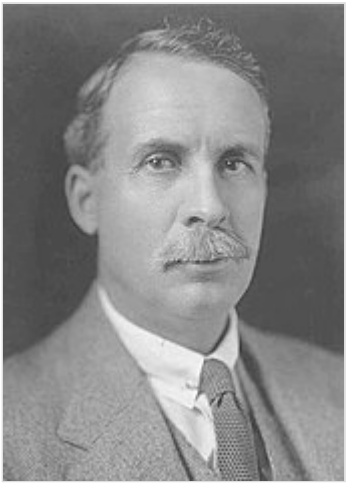
The farmers' difficulties were worsened by the arrival of approximately 20,000 emus.[3] Emus regularly migrate after their breeding season, heading to the coast from the inland regions. With the cleared land and additional water supplies being made available for livestock by the Western Australian farmers, the

emus found that the cultivated lands were good habitat, and they began to foray into farm territory—in particular the marginal farming land around Chandler and Walgoolan.[1] The emus consumed and spoiled the crops and left large gaps in fences where rabbits could enter and cause further problems.[4]

Farmers relayed their concerns about the birds ravaging their crops, and a deputation of ex-soldiers were sent to meet with the Minister of Defence, Sir George Pearce. Having served in World War I, the soldier-settlers were well aware of the effectiveness of machine guns, and they requested their deployment. The minister readily agreed, although with conditions attached: the guns were to be used by military personnel, troop transport was to be financed by the Western Australian government, and the farmers would provide food, accommodation, and payment for the ammunition.[1][5] Pearce also supported the deployment on the grounds that the birds would make good target practice,[6] while it has also been argued that some in the government may have viewed the operation as a way of being seen to be helping the Western Australian farmers, as well as to stave off the brewing secession movement. Towards that end, a cinematographer from Fox Movietone was enlisted.[1]

The "war"

Military involvement was due to begin in October 1932.[5] The "war" was conducted under the command of Major Gwynydd Purves Wynne-Aubrey Meredith of the Royal Australian Artillery's 7th Heavy Artillery,[1][6] with Meredith commanding soldiers Sergeant S. McMurray and Gunner J. O'Halloran,[8] armed with two Lewis guns[9] and 10,000 rounds of ammunition.[6] The operation was delayed by a period of rainfall that caused the emus to scatter over a wider area.[5] The rain ceased by 2 November 1932,[1][5] whereupon the troops were deployed with orders to assist the farmers and, according to a newspaper account, to collect 100 emu skins so that their feathers could be used to make hats for light horsemen.[10]



Defence minister Sir George Pearce ordered the army to cull the emu population. He was later called the "Minister of the Emu War" in parliament by Senator James Dunn.[7]

First attempt

On 2 November, the men travelled to Campion, where some 50 emus were sighted.[1] As the birds were out of range of the guns, the local settlers attempted to herd the emus into an ambush, but the birds split into small groups and ran so that they were difficult to target.[6] Nevertheless, while the first fusillade from the machine guns was ineffective due to the range, a second round of gunfire was able to kill "a number" of birds. Later the same day a small flock was encountered, and "perhaps a dozen" birds were killed.[1]

The next significant event was on 4 November. Meredith had established an ambush near a local dam, and more than 1,000 emus were spotted heading towards their position. This time the gunners waited until the birds were in close proximity before opening fire. The gun jammed after only 12 birds were killed and the remainder scattered before any more could be shot.[8] No more birds were sighted that day.[1]

In the days that followed, Meredith chose to move further south, where the birds were "reported to be fairly tame",[11] but there was only limited success in spite of his efforts.[1] By the fourth day of the campaign, army observers noted that "each pack seems to have its own leader now—a big black-plumed bird which stands fully 1.8 m (6 ft) high and keeps watch while his mates carry out their work of destruction and warns them of our approach".[12] At one stage Meredith even went so far as to mount one of the guns on a truck, a move that proved to be ineffective, as the truck was unable to gain on the birds, and the ride was so rough that the gunner was unable to fire any shots.[1] By 8 November, six days after the first engagement, 2,500 rounds of ammunition had been fired.[6] The number of birds killed is uncertain: one account estimates that it was 50 birds,[6] but other accounts range from 200 to 500, the latter figure being provided by the settlers. Meredith's official report noted that his men had suffered no casualties, except for their dignity.[1]

Summarising the culls, ornithologist Dominic Serventy commented:

> The machine-gunners' dreams of point blank fire into serried masses of Emus were soon dissipated. The Emu command had evidently ordered guerrilla tactics, and its unwieldy army soon split up into innumerable small units that made use of the military equipment uneconomic. A crestfallen field force therefore withdrew from the combat area after about a month.[13]

On 8 November, members in the Australian House of Representatives discussed the operation.[6] Following the negative coverage of the events in the local media,[14] that included claims that "only a few" emus had died,[4] Pearce withdrew the military personnel and the guns on 8 November.[4][6][15][16]

After the withdrawal, Major Meredith compared the emus to Zulus and commented on the striking manoeuvrability of the emus, even while badly wounded.

> If we had a military division with the bullet-carrying capacity of these birds it would face any army in the world ... They can face machine guns with the invulnerability of tanks. They are like Zulus whom even dum-dum bullets could not stop.[12]

Second attempt

After the withdrawal of the military, the emu attacks on crops continued. Farmers again asked for support, citing the hot weather and drought that brought emus invading farms in the thousands. James Mitchell, the Premier of Western Australia lent his strong support to renewal of the military assistance. At the same time, a report from the Base Commander was issued that indicated 300 emus had been killed in the initial operation.[16]

Acting on the requests and the Base Commander's report, by 12 November the Minister of Defence approved a resumption of military efforts.[16] He defended the decision in the Senate, explaining why the soldiers were necessary to combat the serious agricultural threat of the large emu population.[4] Although the military had agreed to lend the guns to the Western Australian government on the expectation that they would provide the necessary people, Meredith was once again placed in the field due to an apparent lack of experienced machine gunners in the state.[1]

Taking to the field on 13 November 1932, the military found a degree of success over the first two days, with approximately 40 emus killed. The third day, 15 November, proved to be far less successful, but by 2 December the soldiers were killing approximately 100 emus per week. Meredith was recalled on 10 December, and in his report he claimed 986 confirmed kills with 9,860 rounds, at a rate of exactly 10 rounds per confirmed kill. In addition, Meredith claimed exactly 2,500 wounded birds had also died from their injuries.[1] In assessing the success of the cull, an article in the *Coolgardie Miner* on 23 August 1935 reported that although the use of machine guns had been "criticised in many quarters, the method proved effective and saved what remained of the wheat".[18]

In November 1932, during parliamentary question time, Prime Minister Joseph Lyons (pictured) was mockingly asked by Lang Labor MP Rowley James whether a medal would be struck for the soldiers.[17]

Aftermath

Despite the problems encountered with the cull, the farmers of the region once again requested military assistance in 1934, 1943, and 1948, only to be turned down by the government.[1][19] Instead, the bounty system that had been instigated in 1923 was continued, and this proved to be effective: 57,034 bounties were claimed over a six-month period in 1934.[6]

By December 1932, word of the Emu War had spread, reaching the United Kingdom. Some conservationists there protested the cull as "extermination of the rare emu".[20] Dominic Serventy and Hubert Whittell, the eminent Australian ornithologists, described the "war" as "an attempt at the mass destruction of the birds".[21][22][23]

Throughout 1930 and onward, exclusion barrier fencing became a popular means of keeping emus out of agricultural areas (in addition to other vermin, such as dingoes and rabbits).[12][24]

In November 1950, Hugh Leslie raised the issues of emus in federal parliament and urged Army Minister Josiah Francis to release a quantity of .303 ammunition from the army for the use of farmers. The minister approved the release of 500,000 rounds of ammunition.[25]

Legacy

In 2019, a musical adaptation of the story was workshopped in Melbourne by playwright Simeon Yialeloglou and composer James Court.[26] An action-comedy film, titled *The Emu War*, premiered at Monster Fest on 22 October 2023.[27][28] Another action-comedy movie retelling of the events, written by John Cleese, Monty Franklin, Rob Schneider, Camilla Cleese, and Jim Jefferies, was aiming to begin production in 2023 or 2024.[29][27]

See also

- Brumby shooting
- Dingo Fence

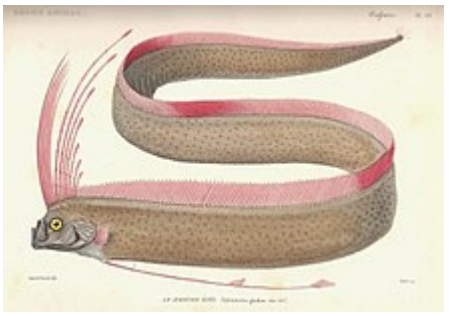
Oarfish

Oarfish are large and extremely long pelagic lampriform fish belonging to the small family Regalecidae.[1] Found in areas spanning from temperate ocean zones to tropical ones, yet rarely seen, the oarfish family contains three species in two genera.[2] One of these, the giant oarfish (*Regalecus glesne*), is the longest bony fish alive, growing up to about 8 m (26 ft) in length.[3]

The common name *oarfish* is thought to allude either to their highly compressed and elongated bodies, or to the now discredited belief that the fish "row" themselves through the water with their pelvic fins.[4][5] The family name Regalecidae is derived from the Latin *regalis*, meaning "royal". Although the larger species are considered game fish and are fished commercially to a minor extent, oarfish are rarely caught alive; their flesh is not well regarded for eating due to its gelatinous consistency.[6]

Their rarity and large size, and their habit of lingering at the surface when sick or dying, make oarfish a probable source of sea serpent tales. Their beachings after storms have gained them a reputation as harbingers of doom, a folk belief reinforced by the numerous beachings before the disastrous 2011 Tōhoku earthquake and tsunami.

Oarfish



Giant oarfish

Scientific classification

Domain:	Eukaryota
Kingdom:	Animalia
Phylum:	Chordata
Class:	Actinopterygii
Order:	Lampriformes
Family:	Regalecidae

Genera

- *Agrostichthys*
- *Regalecus*

Description

The dorsal fin originates from above the (relatively large) eyes and runs the entire length of the fish. Of the approximately 400 dorsal fin rays, the first 10 to 13 are elongated to varying degrees, forming a trailing crest embellished with reddish spots and flaps of skin at the ray tips. The pelvic fins are similarly elongated and adorned, reduced to one to five rays each. The pectoral fins are greatly reduced and situated low on the body.

United States Navy SEALs holding a 23-foot (7.0 m) giant oarfish, found washed up on the shore near San Diego, California, in September 1996

The anal fin is completely absent and the caudal fin may be reduced or absent as well, with the body tapering to a fine point. All fins lack true spines. At least one account, from researchers in New Zealand, described the oarfish as giving off "electric shocks" when touched.[4]

Like other members of its order, the oarfish has a small yet highly protrusible oblique mouth with no visible teeth. The body is scaleless and the skin is covered with easily abraded, silvery ganoine. In the streamer fish (*Agrostichthys parkeri*), the skin is clad with hard tubercles. All species lack gas bladders and the number of gill rakers is variable.

Oarfish coloration is also variable; the flanks are commonly covered with irregular bluish to blackish streaks, black dots, and squiggles. These markings quickly fade following death. It is probable that these markings are bioluminescent in the deep sea.

The giant oarfish is by far the largest member of the family, at a published total length of 8 m (26 ft)—with unconfirmed reports of 11 m (36 ft) and 17 m (56 ft)[3][7][8] specimens—and 270 kg (600 lb) in weight.[9] The streamer fish is known to reach 3 m (10 ft) in length,[10] while the largest recorded specimen of *Regalecus russelii* measured 5.4 m (18 ft).[11]

In some oarfish specimens, end of tails appear stump-like; this is likely the consequence of self-amputation, usually a defense mechanism against predators.[12]

Hyperostotic bone growth has been documented in several specimen of oarfish that have washed up on the coast of California. Hyperossified pterygiophores have been discovered to run along the entire dorsal length of oarfish. The function of this is to both provide structural support to the spine of oarfish during undulations (tail movement used for locomotion) and to remodel spines to prevent stress fractures that could occur from too much movement. It has also been hypothesized that this hyper ossification acts as a lever for the oarfish dorsal fins, which contributes to the organism's buoyancy.[13] Unlike many deep-sea fish, oarfish have no swim bladders for maintaining depth in the water column. It is likely that this lack of a swim bladder forces more frequent tail undulations as the main mode of depth regulation in oarfish.[14]

Evolution

Phylogeny

Through the analysis of the mitochondrial genome of *Regalecus glesne*, the phylogenetic placement of the giant oarfish was further verified. Oarfish are Lampriformes, so placed due to their morphology. Analysis of the mitochondrial genome of an *R. glesne* specimen clusters the species with *Trachipterus trachypterus* and *Zu cristatus*, two other Lampriformes.[15]

Taxonomy

Oarfish were first described in 1772.[16] Three extant species in two extant genera are described:

- Giant Oarfish (*Regalecus glesne*)
- Russell's Oarfish (*Regalecus russelii*)

- Streamerfish (*Agrostichthys parkeri*)

Environment and distribution

The oarfish inhabits the epipelagic to mesopelagic ocean layers, ranging from 250 meters (660 ft) to 1,000 meters (3,300 ft) and is rarely seen on the surface. A few have been found still barely alive, but usually if one floats to the surface, it dies due to depressurisation. At the depths the oarfish live, there are few or no currents. As a result, they build little muscle mass and they cannot survive in shallower turbulent water.[17]

The members of the family have a worldwide range, with tropical, subtropical, and warm temperate distributions.[18] The oarfish typically reside in the mesopelagic area of the sea.[19] However, human encounters with live oarfish are rare, and distribution information is collated from records of oarfish caught or washed ashore.[4]

Ecology and life history

Behaviour

Rare encounters with divers and accidental catches have supplied what little is known of oarfish ethology (behavior) and ecology. In 2001, an oarfish was filmed alive in the wild. The 1.5-metre (4.9-foot) fish was spotted by a group of U.S. Navy personnel during the inspection of a buoy in the Bahamas. The oarfish was observed to propel itself by an amiiform mode of swimming; that is, rhythmically undulating the dorsal fin while keeping the body itself straight. Perhaps indicating a feeding posture, oarfish have been observed swimming in a vertical orientation. In this posture, the downstreaming light would silhouette the oarfishes' prey, making them easier to spot.[20]

An oarfish measuring 3.3 m (11 ft) and 63.5 kg (140 lb) was caught in February 2003 using a fishing rod baited with squid at Skinningrove, United Kingdom.[21]

In July 2008, scientists for the first time captured footage of an oarfish swimming in its natural habitat in the mesopelagic zone in the Gulf of Mexico. The fish was estimated to be between five and ten metres (16 and 33 ft) in length.[22] As part of the SERPENT Project, five observations of apparently healthy oarfish *Regalecus glesne* by remotely operated vehicles were reported from the northern Gulf of Mexico between 2008 and 2011 at depths within the epipelagic and mesopelagic zones.[23] These observations include the deepest verified record of *R. glesne* (463–492 m or 1,519–1,614 ft).[24] In the 2011 sighting, an oarfish has been observed to switch from swimming with a vertical posture to swimming laterally, using lateral undulations of its entire body.[25] Oarfish were found to have late or slow flight responses towards approaching remotely operated vehicles, supporting the hypothesis that they have few natural predators.[25]

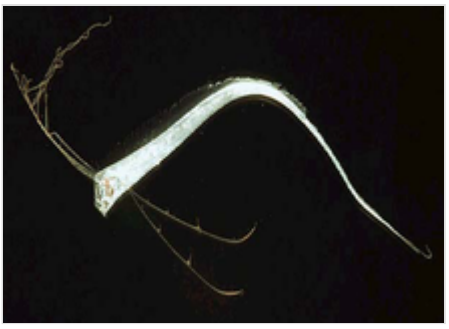
From December 2009 to March 2010, unusual numbers of the slender oarfish *Regalecus russelii*[11] appeared in the waters and on the beaches of Japan.[26]

In 2016, Animal Planet aired an episode of the television series *River Monsters* named "Deep Sea Demon" in which Jeremy Wade was filmed with a live oarfish. The oarfish at this location seemed to be using a buoy anchor chain as a guide to ascend to the surface. On his second diving attempt, he filmed two live oarfish as they came relatively close to the surface. Wade was able to touch one of the oarfish with his hand.[27]

In January 2019 two oarfish were found alive in the nets of fishermen on the Japanese island of Okinawa.[28]

Feeding ecology

Oarfish feed primarily on zooplankton, selectively straining tiny euphausiids, shrimp, and other crustaceans from the water. Small fish, jellyfish, and squid are also taken.[29] It has been observed that oarfish eat by suctioning prey such as plankton blooms while in the water.[30]



Juvenile *Regalecus glesne*

Life history

The oceanodromous *Regalecus glesne* is recorded as spawning off Mexico from July to December; all species are presumed to not guard their eggs, and release brightly coloured, buoyant eggs, up to six millimetres (0.24 in) across, which are incorporated into the zooplankton.[4] Based on their reproductive morphology, oarfish are thought to batch spawn. Within each breeding season that may last one or two months, individuals spawn once or multiple times in discrete spawning events before their gonads enter a long, regressive stage of reproductive development.[31]

The eggs hatch after about three weeks into highly active larvae that feed on other zooplankton. The larvae have little resemblance to the adults, with long dorsal and pelvic fins and extensible mouths. Larvae and juveniles have been observed drifting just below the surface. In contrast, adult oarfish are rarely seen at the surface when not sick or injured. It is probable that the fishes go deeper as they mature.[4]

From January to February 2019, researchers tested and recorded the first successful instance of artificial insemination and hatching of the oarfish (*Regalecus russellii*) using gonads from two washed-up specimens. Compared to adults, the body structure of newly hatched oarfish larvae look more compressed. The larvae often swam using mainly their pectoral fins, facing downward, with their mouths constantly open. The larvae were invertebrates but had bones in their head area, as well as fins. They died of starvation four days after they hatched.[32]

In addition to the otolith, recent studies have revealed more information about the reproductive organs of the oarfish. Using photographs, histological cross-sections, and measurements of four samples of *R. russelii*, researchers were able to qualitatively describe the sexual organs of the species. These studies have shown that female oarfish have bifurcated ovaries containing a cavity through which the eggs pass before leaving the body of the oarfish.[33] Testes on male oarfish are located in a similar place as the ovaries of female oarfish, near the digestive tract called the coelomic cavity.[33] The oarfish have two

separate, disconnected testes and the left testes observed were longer than the right testes. An analysis of these findings led researchers to conclude that *R. russelii* are likely batch-spawning fish that produce a large number of offspring every breeding season.[33]

Reproduction

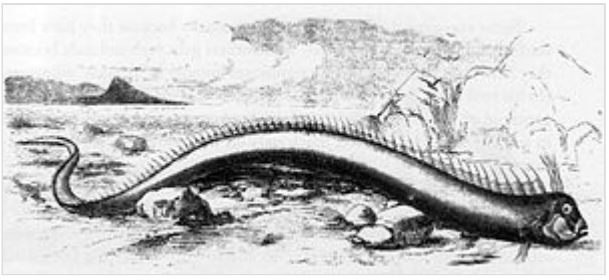
Little is known of the breeding habits of these fish. A single female can produce hundreds of thousands, to millions of eggs. It lays its eggs in the water column and they float freely in the water.[34]

Predators and parasites

A 2015 study suggested that the shortfin mako shark and the sperm whale could both be predators of the oarfish, based on patterns of parasite transmission and analysis of oarfish viscera.[35]

In folklore

The slender oarfish, (竜宮の使い "Ryūgū-No-Tsukai"), known in Japanese folklore as the *Messenger from the Sea God's Palace*, is said to portend earthquakes.[26] The oarfish has been nicknamed the "doomsday fish" because, historically, appearances of the fish were linked with subsequent natural disasters, namely earthquakes or tsunamis.[37][38] After the 2011 Tōhoku earthquake and tsunami which killed over 20,000 people, many in Japan pointed to the 20 oarfish washed up on the country's beaches in 2009 and 2010 in line with this reputation as a harbinger of doom.[28]



Oarfish that washed ashore on a Bermuda beach on 3 March 1860: the fish was 16 ft (4.9 m) long and described at the time as a sea serpent.[36]

See also

- List of fish families
- List of fish common names

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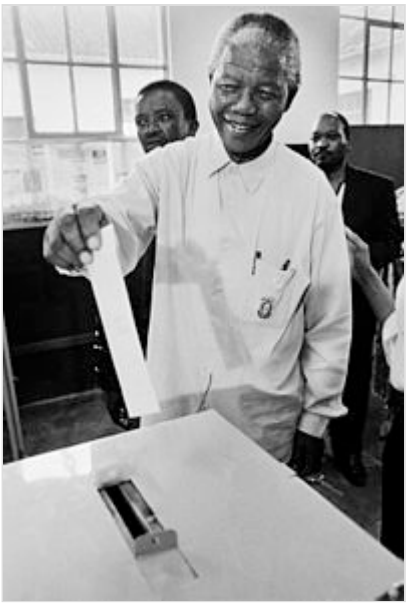
Democracy

Democracy (from Ancient Greek: δημοκρατία, romanized: *dēmokratía*, *dēmos* 'people' and *kratos* 'rule')[1] is a system of government in which state power is vested in the people or the general population of a state.[2][3][4] Under a minimalist definition of democracy, rulers are elected through competitive elections while more expansive definitions link democracy to guarantees of civil liberties and human rights in addition to competitive elections.[5][6][4]



Nelson Mandela casting his ballot in the 1994 South African general election. In the 1990s, the dissolution of apartheid in favour of universal suffrage allowed tens of millions of South Africans, including Mandela, to vote for the first time.

In a direct democracy, the people have the direct authority to deliberate and decide legislation. In a representative democracy, the people choose governing officials through elections to do so. Who is considered part of "the people" and how authority is shared among or delegated by the people has changed over time and at different rates in different countries. Features of democracy oftentimes include freedom of assembly, association, personal property, freedom of religion and speech, citizenship, consent of the governed, voting rights, freedom from unwarranted governmental deprivation of the right to life and liberty, and minority rights.

The notion of democracy has evolved considerably over time. Throughout history, one can find evidence of direct democracy, in which communities make decisions through popular assembly. Today, the dominant form of democracy is representative democracy, where citizens elect government officials to govern on their behalf such as in a parliamentary or presidential democracy. Most democracies apply in most cases majority rule,[7][8] but in some cases plurality rule, supermajority rule or consensus rule are applied. They serve the crucial purpose of inclusiveness and broader legitimacy on sensitive issues—counterbalancing majoritarianism—and therefore mostly take precedence on a constitutional level. In the common variant of liberal democracy, the powers of the majority are exercised within the framework of a representative democracy, but a constitution and supreme court limit the majority and protect the minority—usually through securing the enjoyment by all of certain individual rights, such as freedom of speech or freedom of association.[9][10]

The term appeared in the 5th century BC in Greek city-states, notably Classical Athens, to mean "rule of the people", in contrast to aristocracy (ἀριστοκρατία, *aristokratía*), meaning "rule of an elite".[11] Western democracy, as distinct from that which existed in antiquity, is generally considered to have originated in city-states such as those in Classical Athens and the Roman Republic, where various degrees of enfranchisement of the free male population were observed. In virtually all democratic governments throughout ancient and modern history, democratic citizenship was initially restricted to an elite class, which was later extended to all adult citizens. In most modern democracies, this was achieved through the suffrage movements of the 19th and 20th centuries.

Democracy contrasts with forms of government where power is not vested in the general population of a state, such as authoritarian systems. World public opinion strongly favors democratic systems of government.[12] According to the V-Dem Democracy indices and The Economist Democracy Index, less than half the world's population lives in a democracy as of 2022.[13][14]

Characteristics

Although democracy is generally understood to be defined by voting,[1][10] no consensus exists on a precise definition of democracy.[15] Karl Popper says that the "classical" view of democracy is, "in brief, the theory that democracy is the rule of the people and that the people have a right to rule".[16] One study identified 2,234 adjectives used to describe democracy in the English language.[17]

Democratic principles are reflected in all eligible citizens being equal before the law and having equal access to legislative processes.[18] For example, in a representative democracy, every vote has (in theory) equal weight, and the freedom of eligible citizens is secured by legitimised rights and liberties which are typically enshrined in a constitution,[19][20] while other uses of "democracy" may encompass direct democracy, in which citizens vote on issues directly. According to the United Nations, democracy "provides an environment that respects human rights and fundamental freedoms, and in which the freely expressed will of people is exercised."[21]

One theory holds that democracy requires three fundamental principles: upward control (sovereignty residing at the lowest levels of authority), political equality, and social norms by which individuals and institutions only consider acceptable acts that reflect the first two principles of upward control and political equality.[22] Legal equality, political freedom and rule of law[23] are often identified by commentators as foundational characteristics for a well-functioning democracy.[15]

In some countries, notably in the United Kingdom (which originated the Westminster system), the dominant principle is that of parliamentary sovereignty, while maintaining judicial independence.[24][25] In India, parliamentary sovereignty is subject to the Constitution of India which includes judicial review.[26] Though the term "democracy" is typically used in the context of a political state, the principles also are potentially applicable to private organisations, such as clubs, societies and firms.

Democracies may use many different decision-making methods, but majority rule is the dominant form. Without compensation, like legal protections of individual or group rights, political minorities can be oppressed by the "tyranny of the majority". Majority rule involves a competitive approach, opposed to consensus democracy, creating the need that elections, and generally deliberation, be substantively and procedurally "fair"," i.e. just and equitable. In some countries, freedom of political expression, freedom of speech, and freedom of the press are considered important to ensure that voters are well informed, enabling them to vote according to their own interests and beliefs.[27][28]

It has also been suggested that a basic feature of democracy is the capacity of all voters to participate freely and fully in the life of their society.[29] With its emphasis on notions of social contract and the collective will of all the voters, democracy can also be characterised as a form of political collectivism because it is defined as a form of government in which all eligible citizens have an equal say in lawmaking.[30]

Republics, though often popularly associated with democracy because of the shared principle of rule by consent of the governed, are not necessarily democracies, as republicanism does not specify *how* the people are to rule.[31] Classically the term "republic" encompassed both democracies and aristocracies.[32][33] In a modern sense the republican form of government is a form of government without a monarch. Because of this, democracies can be republics or constitutional monarchies, such as the United Kingdom.

History

Democratic assemblies are as old as the human species and are found throughout human history,[35] but up until the nineteenth century, major political figures have largely opposed democracy.[36] Republican theorists linked democracy to small size: as political units grew in size, the likelihood increased that the government would turn despotic.[37][38] At the same time, small political units were vulnerable to conquest.[37] Montesquieu wrote, "If a republic be small, it is destroyed by a foreign force; if it is large, it is ruined by an internal imperfection."[39] According to Johns Hopkins University political scientist Daniel Deudney, the creation of the United States, with its large size and its system of checks and balances, was a solution to the dual problems of size.[37][40] Forms of democracy occurred organically in societies around the world that had no contact with each other.[41][42]

Nineteenth-century painting by Philipp Foltz depicting the Athenian politician Pericles delivering his famous funeral oration in front of the Assembly[34]

Origins

Greece and Rome

The term *democracy* first appeared in ancient Greek political and philosophical thought in the city-state of Athens during classical antiquity.[43][44] The word comes from *dêmos* '(common) people' and *krátos* 'force/might'.[45] Under Cleisthenes, what is generally held as the first example of a type of democracy in 508–507 BC was established in Athens. Cleisthenes is referred to as "the father of Athenian democracy".[46] The first attested use of the word democracy is found in prose works of the 430s BC, such as Herodotus' *Histories*, but its usage was older by several decades, as two Athenians born in the 470s were named Democrates, a new political name—likely in support of democracy—given at a time of debates over constitutional issues in Athens. Aeschylus also strongly alludes to the word in his play *The Suppliants*, staged in c.463 BC, where he mentions "the demos's ruling hand" [*demou kratousa cheir*]. Before that time, the word used to define the new political system of Cleisthenes was probably isonomia, meaning political equality.[47]

Athenian democracy took the form of direct democracy, and it had two distinguishing features: the random selection of ordinary citizens to fill the few existing government administrative and judicial offices,[48] and a legislative assembly consisting of all Athenian citizens.[49] All eligible citizens were allowed to speak and vote in the assembly, which set the laws of the city-state. However, Athenian citizenship excluded women, slaves, foreigners (μέτοικοι / *métoikoi*), and youths below the age of

military service.[50][51] Effectively, only 1 in 4 residents in Athens qualified as citizens. Owning land was not a requirement for citizenship.[52] The exclusion of large parts of the population from the citizen body is closely related to the ancient understanding of citizenship. In most of antiquity the benefit of citizenship was tied to the obligation to fight war campaigns.[53]

Athenian democracy was not only *direct* in the sense that decisions were made by the assembled people, but also the *most direct* in the sense that the people through the assembly, boule and courts of law controlled the entire political process and a large proportion of citizens were involved constantly in the public business.[54] Even though the rights of the individual were not secured by the Athenian constitution in the modern sense (the ancient Greeks had no word for "rights"[55]), those who were citizens of Athens enjoyed their liberties not in opposition to the government but by living in a city that was not subject to another power and by not being subjects themselves to the rule of another person.[56]

Range voting appeared in Sparta as early as 700 BC. The Spartan ecclesia was an assembly of the people, held once a month, in which every male citizen of at least 20 years of age could participate. In the assembly, Spartans elected leaders and cast votes by range voting and shouting (the vote is then decided on how loudly the crowd shouts). Aristotle called this "childish", as compared with the stone voting ballots used by the Athenian citizenry. Sparta adopted it because of its simplicity, and to prevent any biased voting, buying, or cheating that was predominant in the early democratic elections.[57]

Even though the Roman Republic contributed significantly to many aspects of democracy, only a minority of Romans were citizens with votes in elections for representatives. The votes of the powerful were given more weight through a system of weighted voting, so most high officials, including members of the Senate, came from a few wealthy and noble families.[58] In addition, the overthrow of the Roman Kingdom was the first case in the Western world of a polity being formed with the explicit purpose of being a republic, although it didn't have much of a democracy. The Roman model of governance inspired many political thinkers over the centuries.[59]

Ancient India

Vaishali, capital city of the Vajjika League (Vrijji mahajanapada) of India, is considered one of the first examples of a republic around the 6th century BC.[60][61][62]

Americas

Other cultures, such as the Iroquois in the Americas also developed a form of democratic society between 1450 and 1660 (and possibly in 1142[63]), well before contact with the Europeans. This democracy continues to the present day and is the world's oldest standing representative democracy.[64][65]

Africa

Middle Ages

While most regions in Europe during the Middle Ages were ruled by clergy or feudal lords, there existed various systems involving elections or assemblies, although often only involving a small part of the population. In Scandinavia, bodies known as things consisted of freemen presided by a lawspeaker. These deliberative bodies were responsible for settling political questions, and variants included the Althing in Iceland and the Løgting in the Faeroe Islands.[66][67] The veche, found in Eastern Europe, was a similar

body to the Scandinavian thing. In the Roman Catholic Church, the pope has been elected by a papal conclave composed of cardinals since 1059. The first documented parliamentary body in Europe was the Cortes of León. Established by Alfonso IX in 1188, the Cortes had authority over setting taxation, foreign affairs and legislating, though the exact nature of its role remains disputed.[68] The Republic of Ragusa, established in 1358 and centered around the city of Dubrovnik, provided representation and voting rights to its male aristocracy only. Various Italian city-states and polities had republic forms of government. For instance, the Republic of Florence, established in 1115, was led by the Signoria whose members were chosen by sortition. In the 10th–15th century Frisia, a distinctly non-feudal society, the right to vote on local matters and on county officials was based on land size. The Kouroukan Fouga divided the Mali Empire into ruling clans (lineages) that were represented at a great assembly called the *Gbara*. However, the charter made Mali more similar to a constitutional monarchy than a democratic republic.[69][70]

The Parliament of England had its roots in the restrictions on the power of kings written into Magna Carta (1215), which explicitly protected certain rights of the King's subjects and implicitly supported what became the English writ of habeas corpus, safeguarding individual freedom against unlawful imprisonment with the right to appeal.[71][72] The first representative national assembly in England was Simon de Montfort's Parliament in 1265.[73][74] The emergence of petitioning is some of the earliest evidence of parliament being used as a forum to address the general grievances of ordinary people. However, the power to call parliament remained at the pleasure of the monarch.[75]

Magna Carta, 1215, England

Studies have linked the emergence of parliamentary institutions in Europe during the medieval period to urban agglomeration and the creation of new classes, such as artisans,[76] as well as the presence of nobility and religious elites.[77] Scholars have also linked the emergence of representative government to Europe's relative political fragmentation.[78] Political scientist David Stasavage links the fragmentation of Europe, and its subsequent democratization, to the manner in which the Roman Empire collapsed: Roman territory was conquered by small fragmented groups of Germanic tribes, thus leading to the creation of small political units where rulers were relatively weak and needed the consent of the governed to ward off foreign threats.[79]

In Poland, noble democracy was characterized by an increase in the activity of the middle nobility, which wanted to increase their share in exercising power at the expense of the magnates. Magnates dominated the most important offices in the state (secular and ecclesiastical) and sat on the royal council, later the senate. The growing importance of the middle nobility had an impact on the establishment of the institution of the land *sejmik* (local assembly), which subsequently obtained more rights. During the fifteenth and first half of the sixteenth century, sejmiks received more and more power and became the

most important institutions of local power. In 1454, Casimir IV Jagiellon granted the sejmiks the right to decide on taxes and to convene a mass mobilization in the Nieszawa Statutes. He also pledged not to create new laws without their consent.[80]

Modern era

Early modern period

In 17th century England, there was renewed interest in Magna Carta.[81] The Parliament of England passed the Petition of Right in 1628 which established certain liberties for subjects. The English Civil War (1642–1651) was fought between the King and an oligarchic but elected Parliament,[82][83] during which the idea of a political party took form with groups debating rights to political representation during the Putney Debates of 1647.[84] Subsequently, the Protectorate (1653–59) and the English Restoration (1660) restored more autocratic rule, although Parliament passed the Habeas Corpus Act in 1679 which strengthened the convention that forbade detention lacking sufficient cause or evidence. After the Glorious Revolution of 1688, the Bill of Rights was enacted in 1689 which codified certain rights and liberties and is still in effect. The Bill set out the requirement for regular elections, rules for freedom of speech in Parliament and limited the power of the monarch, ensuring that, unlike much of Europe at the time, royal absolutism would not prevail.[85][86] Economic historians Douglass North and Barry Weingast have characterized the institutions implemented in the Glorious Revolution as a resounding success in terms of restraining the government and ensuring protection for property rights.[87]

John Locke expanded on Thomas Hobbes's social contract theory and developed the concept of natural rights, the right to private property and the principle of consent of the governed. His ideas form the ideological basis of liberal democracies today.

Renewed interest in the Magna Carta, the English Civil War, and the Glorious Revolution in the 17th century prompted the growth of political philosophy on the British Isles. Thomas Hobbes was the first philosopher to articulate a detailed social contract theory. Writing in the *Leviathan* (1651), Hobbes theorized that individuals living in the state of nature led lives that were "solitary, poor, nasty, brutish and short" and constantly waged a war of all against all. In order to prevent the occurrence of an anarchic state of nature, Hobbes reasoned that individuals ceded their rights to a strong, authoritarian power. In other words, Hobbes advocated for an absolute monarchy which, in his opinion, was the best form of government. Later, philosopher and physician John Locke would posit a different interpretation of social contract theory. Writing in his *Two Treatises of Government* (1689), Locke posited that all individuals possessed the inalienable rights to life, liberty and estate (property).[88] According to Locke, individuals would voluntarily come together to form a state for the purposes of defending their rights. Particularly important for Locke were property rights, whose protection Locke deemed to be a government's primary purpose.[89] Furthermore, Locke asserted that governments were legitimate only if they held the consent of the governed. For Locke, citizens had the right to revolt against a government that acted against their interest or became tyrannical. Although they were not widely read during his lifetime, Locke's works are considered the founding documents of

liberal thought and profoundly influenced the leaders of the American Revolution and later the French Revolution.[90] His liberal democratic framework of governance remains the preeminent form of democracy in the world.

In the Cossack republics of Ukraine in the 16th and 17th centuries, the Cossack Hetmanate and Zaporizhian Sich, the holder of the highest post of Hetman was elected by the representatives from the country's districts.

In North America, representative government began in Jamestown, Virginia, with the election of the House of Burgesses (forerunner of the Virginia General Assembly) in 1619. English Puritans who migrated from 1620 established colonies in New England whose local governance was democratic;[91] although these local assemblies had some small amounts of devolved power, the ultimate authority was held by the Crown and the English Parliament. The Puritans (Pilgrim Fathers), Baptists, and Quakers who founded these colonies applied the democratic organisation of their congregations also to the administration of their communities in worldly matters.[92][93][94]

18th and 19th centuries

The first Parliament of Great Britain was established in 1707, after the merger of the Kingdom of England and the Kingdom of Scotland under the Acts of Union. Two key documents of the UK's uncodified constitution, the English Declaration of Right, 1689 (restated in the Bill of Rights 1689) and the Scottish Claim of Right 1689, had both cemented Parliament's position as the supreme law-making body and said that the "election of members of Parliament ought to be free".[96] However, Parliament was only elected by male property owners, which amounted to 3% of the population in 1780.[97] The first known British person of African heritage to vote in a general election, Ignatius Sancho, voted in 1774 and 1780.[98]

Statue of Athena, the patron goddess of Athens, in front of the Austrian Parliament Building. Athena has been used as an international symbol of freedom and democracy since at least the late eighteenth century.[95]

During the Age of Liberty in Sweden (1718–1772), civil rights were expanded and power shifted from the monarch to parliament.[99] The taxed peasantry was represented in parliament, although with little influence, but commoners without taxed property had no suffrage.

The creation of the short-lived Corsican Republic in 1755 was an early attempt to adopt a democratic constitution (all men and women above age of 25 could vote).[100] This Corsican Constitution was the first based on Enlightenment principles and included female suffrage, something that was not included in most other democracies until the 20th century.

Colonial America had similar property qualifications as Britain, and in the period before 1776 the abundance and availability of land meant that large numbers of colonists met such requirements with at least 60 per cent of adult white males able to vote.[101] The great majority of white men were farmers who met the property ownership or taxpaying requirements. With few exceptions, no blacks or women could vote. Vermont, which, on declaring independence of Great Britain in 1777, adopted a constitution modelled on Pennsylvania's citizenship and democratic suffrage for males with or without property.[102] The United States Constitution of 1787 is the oldest surviving, still active, governmental codified

constitution. The Constitution provided for an elected government and protected civil rights and liberties, but did not end slavery nor extend voting rights in the United States, instead leaving the issue of suffrage to the individual states.[103] Generally, states limited suffrage to white male property owners and taxpayers.[104] At the time of the first Presidential election in 1789, about 6% of the population was eligible to vote.[105] The Naturalization Act of 1790 limited U.S. citizenship to whites only.[106] The Bill of Rights in 1791 set limits on government power to protect personal freedoms but had little impact on judgements by the courts for the first 130 years after ratification.[107]

In 1789, Revolutionary France adopted the Declaration of the Rights of Man and of the Citizen and, although short-lived, the National Convention was elected by all men in 1792.[108] The Polish-Lithuanian Constitution of 3 May 1791 sought to implement a more effective constitutional monarchy, introduced political equality between townspeople and nobility, and placed the peasants under the protection of the government, mitigating the worst abuses of serfdom. In force for less than 19 months, it was declared null and void by the Grodno Sejm that met in 1793.[109][110] Nonetheless, the 1791 Constitution helped keep alive Polish aspirations for the eventual restoration of the country's sovereignty over a century later.

1850s lithograph marking the establishment of universal male suffrage in France in 1848

In the United States, the 1828 presidential election was the first in which non-property-holding white males could vote in the vast majority of states. Voter turnout soared during the 1830s, reaching about 80% of the adult white male population in the 1840 presidential election.[111] North Carolina was the last state to abolish property qualification in 1856 resulting in a close approximation to universal white male suffrage (however tax-paying requirements remained in five states in 1860 and survived in two states until the 20th century).[112][113][114] In the 1860 United States census, the slave population had grown to four million,[115] and in Reconstruction after the Civil War, three constitutional amendments were passed: the 13th Amendment (1865) that ended slavery; the 14th Amendment (1869) that gave black people citizenship, and the 15th Amendment (1870) that gave black males a nominal right to vote.[116][117][nb 1] Full enfranchisement of citizens was not secured until after the civil rights movement gained passage by the US Congress of the Voting Rights Act of 1965.[118][119]

The voting franchise in the United Kingdom was expanded and made more uniform in a series of reforms that began with the Reform Act 1832 and continued into the 20th century, notably with the Representation of the People Act 1918 and the Equal Franchise Act 1928. Universal male suffrage was established in France in March 1848 in the wake of the French Revolution of 1848.[120] During that year, several revolutions broke out in Europe as rulers were confronted with popular demands for liberal constitutions and more democratic government.[121]

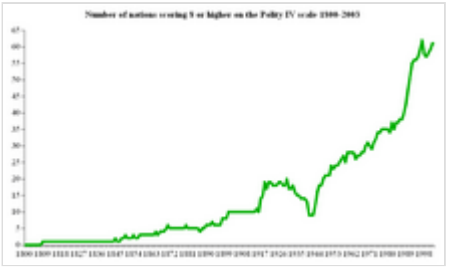
In 1876, the Ottoman Empire transitioned from an absolute monarchy to a constitutional one, and held two elections the next year to elect members to her newly formed parliament.[122] Provisional Electoral Regulations were issued, stating that the elected members of the Provincial Administrative Councils would elect members to the first Parliament. Later that year, a new constitution was promulgated, which provided for a bicameral Parliament with a Senate appointed by the Sultan and a popularly elected Chamber of Deputies. Only men above the age of 30 who were competent in Turkish and had full civil

rights were allowed to stand for election. Reasons for disqualification included holding dual citizenship, being employed by a foreign government, being bankrupt, employed as a servant, or having "notoriety for ill deeds". Full universal suffrage was achieved in 1934.[123]

In 1893, the self-governing colony New Zealand became the first country in the world (except for the short-lived 18th-century Corsican Republic) to establish active universal suffrage by recognizing women as having the right to vote.[124]

20th and 21st centuries

20th-century transitions to liberal democracy have come in successive "waves of democracy", variously resulting from wars, revolutions, decolonisation, and religious and economic circumstances.[125] Global waves of "democratic regression" reversing democratization, have also occurred in the 1920s and 30s, in the 1960s and 1970s, and in the 2010s.[126][127]



The number of nations 1800–2003 scoring 8 or higher on Polity IV scale, another widely used measure of democracy

World War I and the dissolution of the autocratic Ottoman and Austro-Hungarian empires resulted in the creation of new nation-states in Europe, most of them at least nominally democratic. In the 1920s democratic movements flourished and women's suffrage advanced, but the Great Depression brought disenchantment and most of the countries of Europe, Latin America, and Asia turned to strong-man rule or dictatorships. Fascism and dictatorships flourished in Nazi Germany, Italy, Spain and Portugal, as well as non-democratic governments in the Baltics, the Balkans, Brazil, Cuba, China, and Japan, among others.[128]

Painting depicting the opening of the first Australian Parliament in 1901, one of the events that formed part of the first wave of democracy in the early 20th century

The Soviet of Workers' Deputies of Saint Petersburg in 1905: Leon Trotsky in the center. The soviets were as an early example of a workers council.

World War II brought a definitive reversal of this trend in Western Europe. The democratisation of the American, British, and French sectors of occupied Germany (disputed[129]), Austria, Italy, and the occupied Japan served as a model for the later theory of government change. However, most of Eastern Europe, including the Soviet sector of Germany fell into the non-democratic Soviet-dominated bloc.

The war was followed by decolonisation, and again most of the new independent states had nominally democratic constitutions. India emerged as the world's largest democracy and continues to be so.[130] Countries that were once part of the British Empire often adopted the British Westminster system.[131][132]

In 1948, the Universal Declaration of Human Rights mandated democracy:

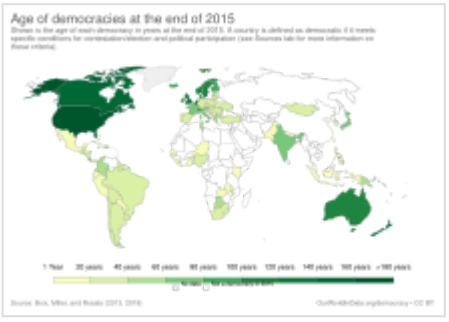
> 3. The will of the people shall be the basis of the authority of government; this will shall be expressed in periodic and genuine elections which shall be by universal and equal suffrage and shall be held by secret vote or by equivalent free voting procedures.
>
> —Universal Declaration of Human Rights, Article 21, United Nations, 1948 (https://www.un.org/en/about-us/universal-declaration-of-human-rights)

By 1960, the vast majority of country-states were nominally democracies, although most of the world's populations lived in nominal democracies that experienced sham elections, and other forms of subterfuge (particularly in "Communist" states and the former colonies). A subsequent wave of democratisation brought substantial gains toward true liberal democracy for many states, dubbed "third wave of democracy". Portugal, Spain, and several of the military dictatorships in South America returned to civilian rule in the 1970s and 1980s.[nb 2] This was followed by countries in East and South Asia by the mid-to-late 1980s. Economic malaise in the 1980s, along with resentment of Soviet oppression, contributed to the collapse of the Soviet Union, the associated end of the Cold War, and the democratisation and liberalisation of the former Eastern bloc countries. The most successful of the new democracies were those geographically and culturally closest to western Europe, and they are now either part of the European Union or candidate states. In 1986, after the toppling of the most prominent Asian dictatorship, the only democratic state of its kind at the time emerged in the Philippines with the rise of Corazon Aquino, who would later be known as the mother of Asian democracy.

The liberal trend spread to some states in Africa in the 1990s, most prominently in South Africa. Some recent examples of attempts of liberalisation include the Indonesian Revolution of 1998, the Bulldozer Revolution in Yugoslavia, the Rose Revolution in Georgia, the Orange Revolution in Ukraine, the Cedar Revolution in Lebanon, the Tulip Revolution in Kyrgyzstan, and the Jasmine Revolution in Tunisia.

Corazon Aquino taking the Oath of Office, becoming the first female president in Asia

According to Freedom House, in 2007 there were 123 electoral democracies (up from 40 in 1972).[134] According to *World Forum on Democracy*, electoral democracies now represent 120 of the 192 existing countries and constitute 58.2 per cent of the world's population. At the same time liberal democracies i.e. countries Freedom House regards as free and respectful of basic human rights and the rule of law are 85 in number and represent 38 per cent of the global population.[135] Also in 2007 the United Nations declared 15 September the International Day of Democracy.[136]



Age of democracies at the end of 2015[133]

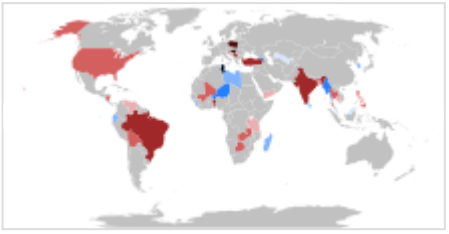
Many countries reduced their voting age to 18 years; the major democracies began to do so in the 1970s starting in Western Europe and North America.[137][138][139] Most electoral democracies continue to exclude those younger than 18 from voting.[140] The voting age has been lowered to 16 for national elections in a number of countries, including Brazil, Austria,

Cuba, and Nicaragua. In California, a 2004 proposal to permit a quarter vote at 14 and a half vote at 16 was ultimately defeated. In 2008, the German parliament proposed but shelved a bill that would grant the vote to each citizen at birth, to be used by a parent until the child claims it for themselves.

Meeting of the Grand Committee of the Parliament of Finland in 2008

According to Freedom House, starting in 2005, there have been 17 consecutive years in which declines in political rights and civil liberties throughout the world have outnumbered improvements,[141][142] as populist and nationalist political forces have gained ground everywhere from Poland (under the Law and Justice Party) to the Philippines (under Rodrigo Duterte).[141][126] In a Freedom House report released in 2018, Democracy Scores for most countries declined for the 12th consecutive year.[143] *The Christian Science Monitor* reported that nationalist and populist political ideologies were gaining ground, at the expense of rule of law, in countries like Poland, Turkey and Hungary. For example, in Poland, the President appointed 27 new Supreme Court judges over legal objections from the European Commission. In Turkey, thousands of judges were removed from their positions following a failed coup attempt during a government crackdown .[144]

"Democratic backsliding" in the 2010s were attributed to economic inequality and social discontent,[146] personalism,[147] poor government's management of the COVID-19 pandemic,[148][149] as well as other factors such as manipulation of civil society, "toxic polarization", foreign disinformation campaigns,[150] racism and nativism, excessive executive power,[151][152][153] and decreased power of the opposition.[154] Within English-speaking Western democracies, "protection-based" attitudes combining cultural conservatism and leftist economic attitudes were the strongest predictor of support for authoritarian modes of governance.[155]



Countries autocratising (red) or democratising (blue) substantially and significantly (2010–2020). Countries in grey are substantially unchanged.[145]

Theory

Early theory

Aristotle contrasted rule by the many (democracy/timocracy), with rule by the few (oligarchy/aristocracy), and with rule by a single person (tyranny or today autocracy/absolute monarchy). He also thought that there was a good and a bad variant of each system (he considered democracy to be the degenerate counterpart to timocracy).[156][157]

A common view among early and renaissance Republican theorists was that democracy could only survive in small political communities.[158] Heeding the lessons of the Roman Republic's shift to monarchism as it grew larger or smaller, these Republican theorists held that the expansion of territory and population inevitably led to tyranny.[158] Democracy was therefore highly fragile and rare historically, as it could only survive in small political units, which due to their size were vulnerable to conquest by larger political units.[158] Montesquieu famously said, "if a republic is small, it is destroyed

by an outside force; if it is large, it is destroyed by an internal vice."[158] Rousseau asserted, "It is, therefore the natural property of small states to be governed as a republic, of middling ones to be subject to a monarch, and of large empires to be swayed by a despotic prince."[158]

Contemporary theory

Among modern political theorists, there are three contending conceptions of democracy: *aggregative democracy*, *deliberative democracy*, and *radical democracy*.[159]

Aggregative

The theory of *aggregative democracy* claims that the aim of the democratic processes is to solicit citizens' preferences and aggregate them together to determine what social policies society should adopt. Therefore, proponents of this view hold that democratic participation should primarily focus on voting, where the policy with the most votes gets implemented.

Different variants of aggregative democracy exist. Under *minimalism*, democracy is a system of government in which citizens have given teams of political leaders the right to rule in periodic elections. According to this minimalist conception, citizens cannot and should not "rule" because, for example, on most issues, most of the time, they have no clear views or their views are not well-founded. Joseph Schumpeter articulated this view most famously in his book *Capitalism, Socialism, and Democracy*.[160] Contemporary proponents of minimalism include William H. Riker, Adam Przeworski, Richard Posner.

According to the theory of direct democracy, on the other hand, citizens should vote directly, not through their representatives, on legislative proposals. Proponents of direct democracy offer varied reasons to support this view. Political activity can be valuable in itself, it socialises and educates citizens, and popular participation can check powerful elites. Most importantly, citizens do not rule themselves unless they directly decide laws and policies.

Governments will tend to produce laws and policies that are close to the views of the median voter—with half to their left and the other half to their right. This is not a desirable outcome as it represents the action of self-interested and somewhat unaccountable political elites competing for votes. Anthony Downs suggests that ideological political parties are necessary to act as a mediating broker between individual and governments. Downs laid out this view in his 1957 book *An Economic Theory of Democracy*.[161]

Robert A. Dahl argues that the fundamental democratic principle is that, when it comes to binding collective decisions, each person in a political community is entitled to have his/her interests be given equal consideration (not necessarily that all people are equally satisfied by the collective decision). He uses the term polyarchy to refer to societies in which there exists a certain set of institutions and procedures which are perceived as leading to such democracy. First and foremost among these institutions is the regular occurrence of free and open elections which are used to select representatives who then manage all or most of the public policy of the society. However, these polyarchic procedures may not create a full democracy if, for example, poverty prevents political participation.[162] Similarly, Ronald Dworkin argues that "democracy is a substantive, not a merely procedural, ideal."[163]

Deliberative

Deliberative democracy is based on the notion that democracy is government by deliberation. Unlike aggregative democracy, deliberative democracy holds that, for a democratic decision to be legitimate, it must be preceded by authentic deliberation, not merely the aggregation of preferences that occurs in voting. *Authentic deliberation* is deliberation among decision-makers that is free from distortions of unequal political power, such as power a decision-maker obtained through economic wealth or the support of interest groups.[164][165][166] If the decision-makers cannot reach consensus after authentically deliberating on a proposal, then they vote on the proposal using a form of majority rule. Citizens assemblies are considered by many scholars as practical examples of deliberative democracy,[167][168][169] with a recent OECD report identifying citizens assemblies as an increasingly popular mechanism to involve citizens in governmental decision-making.[170]

Radical

Radical democracy is based on the idea that there are hierarchical and oppressive power relations that exist in society. Democracy's role is to make visible and challenge those relations by allowing for difference, dissent and antagonisms in decision-making processes.

Measurement of democracy

Democracy indices

Democracy indices are quantitative and comparative assessments of the state of democracy[171] for different countries according to various definitions of democracy.[172]

The democracy indices differ in whether they are categorical, such as classifying countries into democracies, hybrid regimes, and autocracies,[173][174] or continuous values.[175] The qualitative nature of democracy indices enables data analytical approaches for studying causal mechanisms of regime transformation processes.

Democracy indices vary in their scope and the weight assigned to different aspects of democracy. These aspects include the breadth and strength of core democratic institutions, the competitiveness and inclusiveness of polyarchy, freedom of expression, governance quality, adherence to democratic norms, co-option of opposition, and other related factors.electoral system manipulation, electoral fraud, and popular support of anti-democratic alternatives.[176][177][178]

Difficulties in measuring democracy

Democracy is a multifaceted concept encompassing the functioning of diverse institutions, many of which are challenging to measure. As a result, limitations arise in quantifying and econometrically analyzing democracy's potential effects or its relationships with other phenomena, such as inequality, poverty, and education. etc.[180] Given the challenges of obtaining reliable data on within-country variations in aspects of democracy, much of the academic focus has been on cross-country comparisons. However, significant variations in democratic institutions can exist within individual countries, highlighting the limitations of such an approach. Another dimension of the difficulty in measuring democracy lies in the ongoing debate between minimalist and maximalist definitions of democracy. A minimalist conception of democracy defines democracy by primarily considering the essence of democracy; such as electoral procedures.[181] A maximalist definition of democracy can include outcomes, such as economic or administrative efficiency, into measures of democracy.[182] Some aspects