**Appendix for “Does nonviolent repression have stronger dampening effects than state violence? Insight from an emotion-based model of nonviolent dissent.”**

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This Appendix provides additional information on our article published in *Government and Opposition*. It focuses on the empirical research from which the agent-based model was developed, and the translation of the findings into simulation rules. We also present additional figures to illustrate the repression effects identified by the main article. The empirical data are available through public resources. The related qualitative and quantitative analyses, described briefly below, have been published separately (Dornschneider 2021a, 2021b, 2019). Stephanie Dornschneider-Elkink is responsible for the primary research and the prior computational analysis of the data, which inform the article, whereas Bruce Edmonds wrote the agent-based model and ran the simulations for this article.

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## 1- Empirical research

We developed the agent-based model from ethnographic field research (Spradley 1979) on the Arab Spring. For this research, we conducted interviews with participants and non-participants in the mass uprisings in Egypt and Morocco (92 in total). Additionally, we collected Facebook entries in which individuals discussed their intention to protest from the main groups organizing the Arab Spring in Egypt and Morocco (19 in total), namely *Kulana Khaled Sa’id* and *Mouvement du 20 Février*. In total, we identified 92 reasoning processes from interviews, and 19 reasoning processes from Facebook entries. We provide an overview of all interviewees and analysed Facebook entries at the end of this Appendix (see “List of individuals”).

Ethnographic interviews resemble friendly conversations (Spradley 1979). Unlike surveys or other types of interviews, ethnographic interviews contain mostly open questions. Often, they avoid questions altogether, and the interviewee instead encourages the interviewee to elaborate on their thoughts by nodding or repeating certain phrases or words. The basic underlying idea is to avoid priming and collect behavioural descriptions in the interviewees’ own terminology, based on the interviewees’ own judgments of the importance of certain factors. As such, ethnographic interviews serve the construction of rich databases that far exceed the information available from other interview techniques.

A typical introductory question of an ethnographic interview could be: “Could you tell me a little bit about yourself?” A typical ending question could be: “Is there anything else you would like to mention?” Although the interviewee is in charge of the conversation throughout the interview, the interviewer may follow-up with questions focusing on particular subjects occasionally, especially during later stages of the interview. An example of such a question could be: “You mentioned X, could you tell me a little bit more about that?”

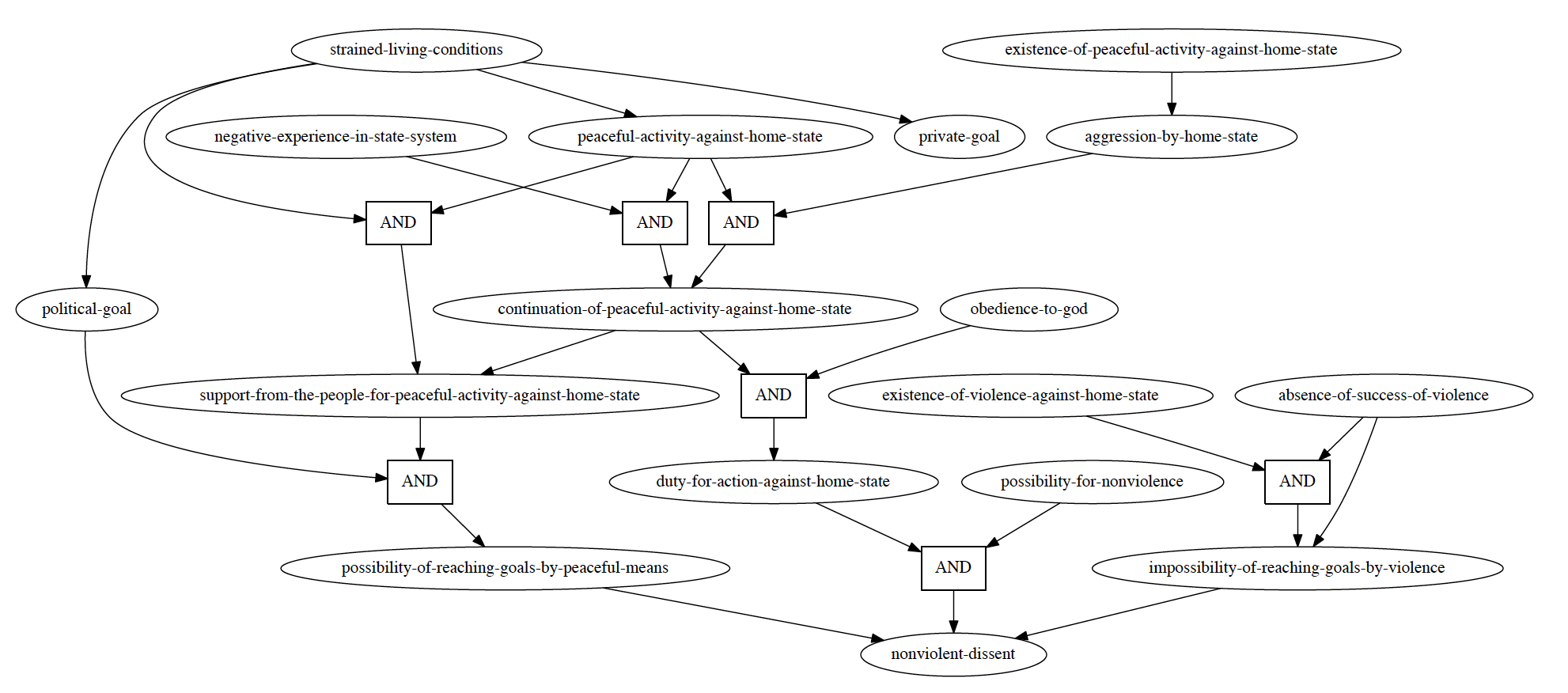
Ethnographic interviews typically happen in a natural setting of the interviewee’s environment, such as cafes or restaurants, or, occasionally, private homes. They are conducted in the interviewee’s native language. In the case of our study, two languages, namely Arabic and French, were applied. In Morocco, which is bilingual, interviewees chose the language in which they wanted to apply during the interview. In Egypt, all interviews were conducted in Arabic.

On Facebook, we collected information through the main groups associated with the Arab Spring – *Kulana Khalid Sa’id* in Egypt and *Mouvement du 20 Février* in Morocco. To identify relevant entries, we searched past posting when the calls for the main protests were made (January 25, 2011 in Egypt and February 20, 2011 in Morocco). There were hundreds of individual posts with responses to these protest calls. Many contained emojis, songs or poems, expressions of surprise or joy, or cultural idioms. Some commented on emotions or particular experiences without referring to their own decision about joining the protests. Others said they would join the protests, but did not provide information about reasons for joining. A few posts tried to discourage others from protesting. From these posts, we manually selected relevant entries in which individuals commented on why they were joining the uprisings.

To analyse our sources, we applied qualitative methods (Spradley 1979; Strauss and Corbin 1990), according to which we coded each sentence for factors that the individuals considered relevant to their behaviour (e.g. political structures, events, emotions, values, etc.), decisions to engage in a certain behaviour (to protest or stay at home), and connections between various types of factors, as well as factors and decisions. We identified connections from linguistic connectors, such as “if…then,” “because,” or “therefore.” We identified factors related to decisions from content words, as well as sub-clauses, main-clauses, or entire sentences.

We abstracted the individuals’ direct speech into broader categories to be able to compare their descriptions of their behaviour. The related coding scheme is published (Dornschneider 2021a). The figure below visualizes an example of the resulting data structure – reasoning processes related to decisions to engage in dissent.

In total, the data contain 121 reasoning processes. 53 contain decisions to join dissent, whereas 68 include decisions to stay at home.[[1]](#footnote-1) The reasoning processes consist of combinations of factors that are related to decisions by large numbers of connections. To systematically differentiate between decisions of protestors and non-protestors, we developed a computational model. The results of the computational analysis informed our agent-based model.



## 2-Towards rules for the agent-based model

The computational analysis of the data shows that protestors’ deliberations are characterized by positive emotions (hope, solidarity, courage, and pride), whereas non-protestors’ deliberations are based on safety considerations. This finding is incorporated into the agent-based model by parameters that assign emotional levels and safety concerns to the population (both parameters are described in the main article). Agents make protest decisions only if their emotion level exceeds that of their concern for their safety.

The computational analysis also shows that positive emotions are triggered by the protest behaviour of others. The agent-based model therefore includes rules according to which individuals’ knowledge of protest translates into higher levels of emotions. Agents can gain protest knowledge through their personal network of friends, through Facebook, and through walking in the streets. The related parameters are outlined in the main article.

The computational analysis also finds that a significantly higher number of non-protestors than protestors reasoned about their employment when deciding about joining the Arab Spring.[[2]](#footnote-2) This finding is incorporated into the model through a parameter capturing the employment level of the population. Unemployed agents are more likely to protest than employed agents, especially during the daytime.

The computational analysis moreover shows that protestors reason significantly more about state repression than non-protestors. These findings are captured by the main focus of the article, and the application of the agent-based model to investigate the effects of state violence, internet cuts, street blockages, and curfews.

In addition to these findings, the model includes a protest space, which was constructed separately, and which is described in the main article.

## 3-Model description

This is a semi-formal description of the simulation model roughly following the ODD standard (Grimm et al. 2020). The complete code and a technical description of the simulation is available in Edmonds and Dornschneider 2019.

### 3-1 Purpose

The purpose of the simulation was to explore and better understand the process of bridging between an analysis of qualitative data and the specification of a simulation.

### 3-2 Basic entities

* Three kinds of location: *houses*, *streets*, and *the square* these are composed on a 2D grid of patches, with a fixed layout of 4 residential districts, 4 streets leading to the central square area
* Different periods in each day, categorised into four different phases: *morning*, *daytime*, *evening*, and *night* (lasting 1, 3, 5 and 2 simulations ticks respectively)
* One kind of agent: *citizens*, each of which has the following properties:
  + **fixed properties**: home location, employed?, whether on facebook, their safety level - their threshold for reacting emotionally, their friends (others they would text/phone to tell of a protest or attack)
  + **variable properties**: location (home, nearest location in street to home, a location on the square), level of positive emotion (between 0 and 1), whether they know a protest is happening, whether they are currently protesting, whether they know of any government violence occurring that day
* A *social network*: permanent links are created at the start – between all agents on the same home patch, but also between others based on their num-friends (determined at start using random Poisson distribution using the average given by av-num-friends). **locality-friends** controls how distant these are from their home - the set of the nearest other num-friends x locality-friends is collected and a random selection of num-friends taken from this. Thus if locality-friends the friends are precisely the num-friends nearest (which will overlap with those on the same patch) – the bigger locality-friends is the more distant the links are (on average).

### 3-3 Global variables

* *Time*: day and period of the day (and how that is categorised)
* *FaceBook shows protes*t: whether news of a protest is happening is on Facebook
* *FaceBook shows attacks*: whether news that a citizen has been attacked is on Facebook

The rest of the global variables are either concerned with the appearance of the simulation, debugging or the collection of statistics and thus do not affect the represented processes or structures.

### 3-4 Process overview and scheduling

The simulation is executed in a synchronous fashion on discrete simulation time ticks. Movement between locations is determined by simple but context-dependent rules (it depends on both the phase of the day and the kind of location of each agent)

* *Time*: each day is divided into a sequence of ten periods, categorised as 4 phases, thus: ["morning" "daytime" "daytime" "daytime" "evening" "evening" "evening" "evening" "evening" "night" "night"].
  + **Morning**: Citizens are relocated home if not already there, knowledge of protest is reset, emotion levels are unevenly reduced according to parameters
  + **Daytime**: Employed stay at home (are working), unemployed may move to street to socialise, or the square
  + **Evening**: Employed may move to street to socialise, or the square
  + **Night**: Employed go home, and many of unemployed
* *Movement*: there are only 3 locations for each citizen: their home location, the street (a square on street near to home location), somewhere on the square. Movement is either home → street → home or home → street → square → home. This depends on current location, phase of day, whether citizen is employed, their emotion level and whether they have heard that a protest is happening.
* *Knowledge of protests*: if citizen starts to protest, if they are on Facebook knowledge of this is immediately transmitted to all Facebook users, otherwise this knowledge is passed between individuals only via phone calls/texts (the explicit social network, or when they occupy the same simulation patch.
* *Knowledge of attacks*: if a citizen is attacked, then that citizen and all others at any location they are at (including the location of the attack) know of the attack, if they are on facebook knowledge of this is immediately transmitted to all Facebook users, otherwise this knowledge is passed between individuals only via phone calls/texts (the explicit social network, or when they occupy the same simulation patch.
* *Level of emotion*: in the morning emotion levels are unevenly depressed (using av-wake-dampening and wake-sd), all emotion levels of agents are changed: each agent’s level is multiplies by a random number sampled from a normal distribution mean av-wake-dampening and standard deviation, wake-sd (restricted to be in [0, 1]). Thereafter can be affected by others, but only by those on the same patch. If the average level of emotion of others on a patch is higher than own emotion goes up to that level

The standard buttons for setup, go and step are provided. The links, + and - buttons affect the world display. To run the model, one should only need: setup – to initialise a new simulation, step – to move the simulation forward one time click (a period within a day), go – to start the simulation going, and seed (if it is 0 then it is using a random seed, if set to a non-zero integer that is used as the seed so that simulation runs can be exactly repeated).

### 3-5 Design concepts

#### Basic principles

The simulation is deliberately simple, trying to add as little as possible that was not revealed in the analysis of the qualitative data or suggested by the available literature.

#### Emergence

Collective protests emerge from the actions of individual citizens, via movement, spreading emotion and knowledge of the existence of the protests and government attacks on individuals.

#### Adaptation

Basic adaptation is achieved in terms of the level of emotion in each agent and where they move to.

#### Learning

Starting each day from a clean slate, agents may learn knowledge of two kinds: whether protests are occurring; and whether there have been any government attacks on citizens. This knowledge is transmitted via direct observation, face-face communication, via the social phone network and via Facebook (for the agents that are online).

#### Sensing

Agents sense the level of emotion in other agents on the same patch as themselves.

#### Interaction

The only interaction between agents is in terms of transmitting knowledge (of protests and attacks) and influencing each other’s level of emotion.

#### Stochasticity

There are a number of points in which stochasticity comes into the model. These include:

* During initialisation:
  + The population is generated by repeatedly: randomly picking a house from among those with fewest agents and putting an agent on there, until the population of agents is the right size (population).
  + Each agent is initialised with some randomised characteristics namely its:
    - safety-prop (propensity towards safety) is drawn from a random normal distribution, mean av-safety-prop and standard deviation, 0.25
    - num-friends-made is set by sampling from a random Poisson distribution with mean: av-num-friends-made (restricted to be in [0, 1])
    - positive-emotion is randomly sampled from a normal distribution mean 0.3333 and standard deviation, 0.16667 (restricted to be in [0, 1])
  + The friendship network (who might phone who up) is constructed for each agent by linking it to a random sample of num-friends-made from a set of the closest (locality-friends \* num-friends-made) other agents. If locality-friends = 1 then this is only the num-friends-made closest agents, if locality-friends = 2 then it is linked to a random sample from a set of closest agents twice that size etc.
* During the simulation, every morning (period 0 in the day) each agent is subject to random perturbations in their emotions for reasons outside the model, by multiplying it with a random number sampled from a normal distribution mean av-wake-dampening and standard deviation, wake-sd (restricted to be in [0, 1])

#### Collectives

There are no explicit collectives, but the protests that emerge could be interpreted as one.

#### Observation

The world-view is a stylised city, with brown residential areas, grey streets and a darker grey square. Citizens are shown as crosses (unemployed) or circles (employed). Their colour is their emotional state – from red=high (1) down to blue for low (0). If they are protesting they are magenta. The links are friendships.

Other outputs include:

* day, period, phase
* s/tick: is the average seconds per simulation tick, indicating the speed that the simulation is working at
* histogram of emotion levels: shows the distribution of emotional levels.
* graph of average emotion levels: shows the average emotional level over time.
* graph of number of protesters: shows the number of protestors

### 3-5 Initialisation

#### Initialisation parameters

These are only effective in terms of generating the initial population etc. at the start

* patches-across: determines how many patches across each of the 4 residential areas are
* population: how many citizens there are
* employment%: the probability (as a %) that a citizen is employed
* fb-user%: the probability (as a %) that a citizen is connected via Facebook
* av-safety-prop: each citizen's (permanent) safety level is generated from a random normal distribution with this average and SD 0.25
* av-num-friends: each citizen's number of friends is generated by a random Poisson process with this as the average
* locality-friends: How local are the friendship links (see section on Stochasticity for details)

#### Dynamic parameters

These affect the processes of the simulation as it runs

* av-wake-dampening: when citizens awake, their level of emotion is dampened by a factor taken from a random normal distribution with mean av-wake-dampening and SD wake-sd
* wake-sd: see immediately above
* rand-goto-sq: the chance that an emotionally motivated unemployed citizens spontaneously goes to the square even without knowing a protest is happening
* unemp-gohome-night: the probability that unemployed go home each night period
* gen-dampening: the general decay factor of emotional level each

#### Government responses

These can be manually adjusted to simulate possible responses by the government

* fb-on?: stop communication happening via facebook - turning the internet off
* travel-difficulty%: add barriers etc. to make travel to the square more difficult, 0% means no barriers, 100% means it is impossible to get there
* threaten-employed?: if this is on then employed people will not protest for fear of losing their job
* gov-attack-prob: the probability that an agent is attacked (subject to state violence) each tick they are on the street or in the square
* curfew-st-period: what time period during the day that a curfew starts (forcing all to be at home after this time) – a setting of 10 is effectively no curfew, since this is the last time each day
* gov-measure-st: The day (in simulation time) when the above four government responses come into force
* len-gov-measure: how many days the above government response will last in ddays

## 4- Model findings

### 4-1 Identifying protest conditions

We first ran the model with varying input levels of population numbers (2-2000) and set the parameters for repressive measures such that there is no repression. In these simulations, protest levels are dominated by the emotional characteristics – “av-wake-dampening” and “wake-sd”. High dampening and low variance in emotions are associated with low protest numbers, whereas low dampening and high variance in emotions are associated with high protest numbers. The following figure visualizes this. It shows a 3D view of emotional level (av wake damp) and emotional variation (wake sd) in relation to protest behavior. The figure shows the maximum number of protestors on the last of 100 simulation days. The parameters were set at the values specified in the main article (see “Model Description”).

A close up of a map

Description automatically generated

The parameters representing emotions identify four protest conditions: “high,” “sup-critical,” “critical,” and “low” conditions. The following figure, which is a plan view of the figure above, shows these conditions.



In the “high” condition, a maximum number of protestors are on the square throughout the simulation. This condition is related to high levels and variance in emotions. The related settings of the emotional parameters are .5 and .95. In the “sup-critical” condition, a medium number of protestors are on the square with a tendency of reaching the maximum protest levels. The sup-critical condition is related to setting both emotional parameters at .45. The “critical” condition exhibits low numbers of protestors, which increase but then drop again. The critical condition is based on setting the emotional parameters at .4. In the “low” protest condition, there are minimum numbers of protestors. The related setting of the emotional parameters is .3.

### 4-2 Short-term effects of repression in the critical protest condition

In the main article, we introduce the u-shaped, short-term effect of state violence on the maximum numbers of protestors over the course of a simulation day in the critical condition (Figure 6). Below, we present the related effects for the remaining repressive measures, namely curfews, street blockages (Travel), and internet cuts (FB users). For reasons of clarity, the visualizations include the effects related to state violence (Gov Attack). As discussed in the main text, no comparable u-shaped effects are observable related to any other repression type.

In graphs the vertical scale is the maximum number of protestors at the end of the run (day 100), averaged over 20 independent runs of the simulation with the indicated parameter setting. Horizontal settings: “Gov Attack” is the probability of each agent being the subject of government violence each day, “Travel” is the proportion (%) of attempted movement to the square that is prevented, “FB Users” is the proportion (%) of the population that are connected via Facebook, “Curfew Start” is the period of the day (which go from 1 to 10) after which a curfew is imposed and agents have to be at their home. The error bars range from the 25th to the 75th percentiles.

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### 4-3 Long-term effects of repression in the critical and sup-critical protest condition

The simulations identify long-term spurring effects of repression in the critical and sup-critical protest conditions. The main article discusses the spurring effects of state violence in the sup-critical and critical condition, where violence is applied between days 10 to 40 of the simulation. The following visualizations show these effects. Each color represents a different level of state violence, measured as the probability that an individual suffers this. The time frame during which state violence is applied (over 10-40 days) is marked by the region of time between the dotted vertical lines.





The visualizations below include all time frames, indicated by vertical dotted lines, namely 0-30, 10-40, 20-50, 30-60, and 40-70 days. Colours refer to the magnitude of violence, with 0 indicating the lowest point on the scale. The vertical scale shows the maximum number of protestors on a given day, averaged over 20 independent runs of the simulation with the parameter setting outlined in the main article (see Model Description). The horizontal scale shows the number of simulation days, totalling 100.

The results identify spurring effects after the application of state violence has ended. In the critical condition, these spurring effects are particularly strong related to high magnitudes of violence. The results also show spurring effects over the course of the 30 days in which violence is applied. In the sup-critical condition, the results identify no effects or dampening effects, except for application over the first 30 simulation days. In the critical condition, the graphs show spurring effects related to all time frames of the application of violence. The spurring effects for high magnitude of violence are lower during the application period.

|  |  |
| --- | --- |
| Critical condition | Sup-critical condition |
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The following figures visualize the corresponding effects for the remaining repressive measures for the application time frame of 0 to 30 days. As above, colours refer to the magnitude of the repressive measure. “Travel Restriction” is the proportion (%) of attempted movements to the square or street that are prevented, “Curfew” is the period of the day (which go from 1 to 10) after which a curfew is imposed and agents have to be at their home (so 10 is equivalent to no curfew at all), “FaceBook” is whether 10% of citizens have access to the service or this is blocked off.

The graphs identify spurring effects after each measure has been applied in critical and sup-critical conditions. During the application timeframe, there are spurring effects related to low magnitudes of travel restrictions and curfews, but pre-emptive and dampening effects related to high magnitudes of these measures. Some of these effects are observed after the application timeframe: Full blockage of travel (100) is associated with the pre-empting of protest after roads have been opened again (critical condition). Curfews covering large parts of the day (0-6) have the same pre-emptive effect after they are lifted (sup-critical condition). Regarding Facebook, spurring is associated with and without internet cuts during and after the application of this measure in both critical and sup-critical conditions.

|  |  |
| --- | --- |
| Critical condition | Sup-critical condition |
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### 4-3 Long-term effects of repression in the remaining protest condition

The following visualizations provide examples for the high/no-threat and low conditions for the application period from 10 to 40 simulation days. The graphs show that protest levels are the same before and after the application of repressive measures. Nevertheless, during the application of repression, there are spurring effects associated with violence (high and low conditions), as opposed to dampening effects of travel restrictions and curfews (high conditions). As above, spurring effects of low magnitude of violence are the strongest, and dampening effects of high magnitude of curfews and street blockages are the highest.

|  |  |
| --- | --- |
| **High/No threat condition** | **Low condition** |
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## 5- List of individuals

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| --- | --- | --- | --- | --- |
| **Individual[[3]](#footnote-3)** | **Gender[[4]](#footnote-4)** | **Age[[5]](#footnote-5)** | **Occupation** | **Place** |
| P1 | m | 3 | engineer | Rabat |
| P2 | m | 3 | employee | Rabat |
| P3 |  |  |  | Facebook |
| P4 | m | 4 | politician | Rabat |
| P5 | m | 4 | journalist | Rabat |
| P6 | m | 3 | Muslim leader | Casablanca |
| P7 | m | 2 | journalist | Casablanca |
| P8 | m | 3 | academic | Rabat |
| P9 | m | 3 | journalist | Rabat |
| P10 | m | 2 | student | Marrakech |
| P11 |  |  |  | Facebook |
| P12 | f | 2 | psychologist | Rabat |
| P13 | m | 1 | student | Rabat |
| P14 | m | 3 | employee | Rabat |
| P15 | m | 3 | employee | Rabat |
| P16 | m | 3 | journalist | Casablanca |
| P17 | m | 2 | student | Casablanca |
| P18 | m | 2 | banker | Rabat |
| P19 |  |  |  | Facebook |
| P20 |  |  |  | Facebook |
| P21 |  |  |  | Facebook |
| P22 |  |  |  | Facebook |
| P23 |  |  |  | Facebook |
| P24 | f | 4 | housewife | Alexandria |
| P25 | m | 4 | retired | Alexandria |
| P26 | f | 3 | teacher | Cairo |
| P27 |  |  |  | Facebook |
| P28 |  |  |  | Facebook |
| P29 | f | 3 | academic | Cairo |
| P30 | m | 3 | banker | Cairo |
| P31 | m | 3 | merchant | Cairo |
| P32 | m | 2 | employee | Cairo |
| P33 | f | 3 | employee | Cairo |
| P34 |  |  |  | Facebook |
| P35 | m | 2 | employee | Cairo |
| P36 | m | 3 | merchant | Alexandria |
| P37 | m | 3 | employee | Cairo |
| P38 | m | 3 | employee | Alexandria |
| P39 | f | 3 | journalist | Cairo |
| P40 | m | 2 | employee | Cairo |
| P41 | f | 2 | student | Cairo |
| P42 |  |  |  | Facebook |
| P43 |  |  |  | Facebook |
| P44 |  |  |  | Facebook |
| P45 |  |  |  | Facebook |
| P46 |  |  |  | Facebook |
| P47 |  |  |  | Facebook |
| P48 |  |  |  | Facebook |
| P49 |  |  |  | Facebook |
| P50 |  |  |  | Facebook |
| NP1 | m | 2 | student | Marrakech |
| NP2 | m | 3 | donkey rider | Marrakech |
| NP3 | f | 2 | employee | Marrakech |
| NP4 | f | 1 | employee | Marrakech |
| NP5 | m | 3 | merchant | Marrakech |
| NP6 | m | 3 | merchant | Rabat |
| NP7 | m | 3 | merchant | Rabat |
| NP8 | f | 3 | pharmacist | Salé |
| NP9 | m | 2 | employee | Rabat |
| NP10 | m | 3 | librarian | Rabat |
| NP11 | f | 2 | employee | Rabat |
| NP12 | f | 3 | employee | Rabat |
| NP13 | m | 3 | employee | Rabat |
| NP14 | m | 2 | employee | Rabat |
| NP15 | m | 3 | employee | Rabat |
| NP16 | f | 2 | lawyer | Rabat |
| NP17 | f | 3 | teacher | Salé |
| NP18 | f | 3 | employee | Rabat |
| NP19 | m | 2 | merchant | Marrakech |
| NP20 | f | 3 | cleaner | Marrakech |
| NP21 | f | 1 | employee | Marrakech |
| NP22 | m | 4 | security guard | Marrakech |
| NP23 | m | 2 | student | Rabat |
| NP24 | m | 2 | banker | Rabat |
| NP25 | f | 3 | merchant | Rabat |
| NP26 | m | 2 | employee | Rabat |
| NP27 | f | 2 | accountant | Rabat |
| NP28 | f | 3 | employee | Rabat |
| NP29 | m | 2 | employee | Rabat |
| NP30 | m | 4 | merchant | Rabat |
| NP31 | m | 2 | manager | Rabat |
| NP32 | m | 3 | employee | Marrakech |
| NP33 | f | 2 | employee | Marrakech |
| NP34 | m | 4 | employee | Rabat |
| NP35 | f | 4 | employee | Rabat |
| NP36 | m | 3 | journalist | Rabat |
| NP37 | m | 3 | businessman | Cairo |
| NP38 | m | 2 | employee | Cairo |
| NP39 | m | 3 | banker | Cairo |
| NP40 | m | 1 | employee | Cairo |
| NP41 | m | 3 | employee | Cairo |
| NP42 | m | 3 | employee | Cairo |
| NP43 | m | 4 | employee | Cairo |
| NP44 | m | 2 | employee | Cairo |
| NP45 | m | 2 | employee | Cairo |
| NP46 | m | 3 | employee | Cairo |
| NP47 | m | 3 | banker | Cairo |
| NP48 | m | 4 | retired | Alexandria |
| NP49 | f | 4 | housewife | Alexandria |
| NP50 | f | 3 | teacher | Cairo |
| NP51 | f | 3 | academic | Cairo |
| NP52 | m | 3 | employee | Cairo |
| NP53 | f | 3 | employee | Cairo |
| NP54 | m | 3 | policeman | Cairo |
| NP55 | m | 3 | unemployed | Cairo |
| NP56 | f | 4 | employee | Cairo |
| NP57 | f | 4 | cleaner | Cairo |
| NP58 | m | 3 | academic | Cairo |
| NP59 | m | 3 | pharmacist | Cairo |
| NP60 | m | 4 | employee | Cairo |
| NP61 | m | 2 | employee | Cairo |
| NP62 | m | 2 | employee | Cairo |

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1. While each Facebook entry was translated into a single reasoning process, several interviews contained descriptions of several events, which were coded into separate reasoning processes. [↑](#footnote-ref-1)
2. Note that the analysis nevertheless found that non-protestors commented on economic grievances more often than protestors. [↑](#footnote-ref-2)
3. P = Protestor, NP = Non-Protestor [↑](#footnote-ref-3)
4. m = male, f = female [↑](#footnote-ref-4)
5. age groups: 1=<20, 2=20-30, 3=30-50, 4=>50 [↑](#footnote-ref-5)