



Research Article

## A Multi-dimensional Matrix for Better Defining and Conceptualizing Resilience

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**Abstract:** The emerging challenges for the resilience of nations and societies, as well as for communities and individuals, are numerous and diverse. Nevertheless, the multiplicity of definitions existing in the literature for resilience, as well as the discrepancies between them, make it difficult to evaluate, operationalize, or to compare resilience research findings across studies. The purpose of the current article is to provide a coherent and general definition for the term resilience and other sub-types of this general concept. This will be achieved through presenting a two-dimensional matrix, divided into four *content* categories (social, economic, political, and military) and three *level* categories (individual, community, and State). The recent COVID-19 pandemic may advocate Global as a fourth level, yet its full implication is too premature to be assessed. The proposed matrix generates twelve cells, which present twelve different sub-types of resilience. Subsequently, this matrix can be used for a comprehensive definition of resilience and its sub-types, as well as for possible assessments of resilience at its various faces.

**Keywords:** Resilience, definitions for resilience, taxonomy of resilience.

### Introduction

Literature surveys on resilience clearly demonstrate the fact that definitions of resilience vary according to the approach, discipline, or subject matter upon

which these definitions are based.<sup>1,2,3,4,5</sup> One can find different definitions of resilience even within a specified discipline.<sup>6</sup> The multiplicity of definitions and the discrepancies between them make it difficult to evaluate, operationalize, or compare resilience research findings and hence to promote the accumulated knowledge on resilience based on them.<sup>7</sup> The purpose of the present article is to provide a coherent and general definition of resilience since, as far as we know, there is no academic work that separates the multiplicity of approaches regarding resilience. Moreover, drawing from an inclusive definition for resilience we offer a series of specific definitions for twelve sub-types of resilience.

It is our contention that a strong basis for conceptualizing resilience, as well as for measuring and implementing the perceptions that exist at its core, can be achieved mainly through differentiation and specification – of separate levels and distinct domains. The conceptualization proposed here is based on a multi-dimensional resilience categorical matrix. The matrix comprises two dimensions—‘content’ and ‘level’—which in turn comprise respectively three and four categories. Moreover, it is based on a general and very common definition of resilience and implies a more specific definition to each of the twelve ‘cells’ generated by this four-by-three matrix.

## Reconceptualizing Resilience

Out of the numerous definitions of the term ‘resilience’ in the literature, it is still possible to point out three prevailing characteristics that appear in most of them.

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<sup>1</sup> Philippe Bourbeau, “Resilience and International Politics: Premises, Debates, Agenda,” *International Studies Review* 17, no. 3 (September 2015): 374-395, <https://doi.org/10.1111/misr.12226>.

<sup>2</sup> Carl Folke, et al., “Resilience and Sustainable Development: Building Adaptive Capacity in a World of Transformations,” *AMBIO: A Journal of the Human Environment* 31, no. 5 (August 2002): 437-440, <https://doi.org/10.1579/0044-7447-31.5.437>.

<sup>3</sup> Steven M. Southwick, et al., “Resilience Definitions, Theory, and Challenges: Interdisciplinary Perspectives,” *European Journal of Psychotraumatology* 5, no. 1 (October 2014), 25338, <https://doi.org/10.3402/ejpt.v5.25338>.

<sup>4</sup> “Definitions of Community Resilience: An Analysis,” *A CARRI Report*, <https://s31207.pcdn.co/wp-content/uploads/2019/08/Definitions-of-community-resilience.pdf>.

<sup>5</sup> Gemma M. Balmer, Julie-Ann Pooley, and Lynne Cohen, “Psychological Resilience of Western Australian Police Officers: Relationship between Resilience, Coping Style, Psychological Functioning and Demographics,” *Police Practice and Research: An International Journal* 15, no. 4 (2014): 270-282, <https://doi.org/10.1080/15614263.2013.845938>.

<sup>6</sup> “Definitions of Community Resilience.”

<sup>7</sup> Dmitry M. Davydov, et al., “Resilience and Mental Health,” *Clinical Psychology Review* 30, no. 5 (July 2010): 479-495, <https://doi.org/10.1016/j.cpr.2010.03.003>.

- Resilience is perceived as an ability (or a capacity or capability – but not as a reaction, response, a trait, or a process) of a person, a group, a community, or a society.<sup>8,9,10,11,12</sup>
- Resilience involves a dynamic change or transformation of behavior.<sup>13,14,15</sup>
- Resilience is typified by a dynamic adaptive capacity of a system to adjust to an evolving situation.<sup>16,17</sup>

A precondition for the existence of resilient behavior is the occurrence of a disruption. This is because the need for resilience appears only in a state where a system's equilibrium is interrupted. The disruption can be man-made, e.g., war, terror, violence, or can be caused by nature, e.g., earthquake, tsunami, floods, etc., as long as it causes a significant disturbance in people's routine life.<sup>18</sup>

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<sup>8</sup> Byron Egeland, Elizabeth Carlson, and L. Alan Sroufe, "Resilience as Process," *Development and Psychopathology* 5, no. 4 (Fall 1993): 517-528, <https://doi.org/10.1017/S0954579400006131>.

<sup>9</sup> George A. Bonanno, "Loss, Trauma, and Human Resilience: Have We Underestimated the Human Capacity to Thrive After Extremely Aversive Events?" *American Psychologist* 59, no. 1 (2004): 20-28, quote on p. 20, <https://doi.org/10.1037/0003-066X.59.1.20>.

<sup>10</sup> Betty J. Pfefferbaum, et al., "Building Resilience to Mass Trauma Events," in *Handbook of Injury and Violence Prevention Interventions*, ed. Lynda S. Doll, Sandra E. Bonzo, David A. Sleet, James A. Mercy, and E. N. Haas (Atlanta: Springer, 2007), 347-358.

<sup>11</sup> Dean Ajdukovic, Shaul Kimhi, and Mooli Lahad, *Resiliency: Enhancing Coping with Crisis and Terrorism*, NATO Science for Peace and Security series, Vol. 119 (Amsterdam: IOS Press, 2015).

<sup>12</sup> Melissa Parsons, et al., "Top-down Assessment of Disaster Resilience: A Conceptual Framework using Coping and Adaptive Capacities," *International Journal of Disaster Risk Reduction* 19 (October 2016): 1-11, <https://doi.org/10.1016/j.ijdr.2016.07.005>.

<sup>13</sup> Neil W. Adger, "Social and Ecological Resilience: Are They Related?" *Progress in Human Geography* 24, no. 3 (2000): 347-364, <https://doi.org/10.1191/030913200701540465>.

<sup>14</sup> Fikret Berkes and Helen Ross, "Community Resilience: Toward an Integrated Approach," *Society & Natural Resources* 26, no. 1 (2013): 5-20, <https://doi.org/10.1080/08941920.2012.736605>.

<sup>15</sup> Jean-Christophe Gaillard, "Vulnerability, Capacity and Resilience: Perspectives for Climate and Development Policy," *Journal of International Development* 22, no. 2 (March 2010): 218-232, <https://doi.org/10.1002/jid.1675>.

<sup>16</sup> David Fletcher and Mustafa Sarkar, "Psychological Resilience: A Review and Critique of Definitions, Concepts, and Theory," *European Psychologist* 18, no.1 (2013): 12-23, <https://doi.org/10.1027/1016-9040/a000124>.

<sup>17</sup> Carmit Padan and Meir Elran, *The "Gaza Envelope" Communities: A Case Study of Societal Resilience in Israel (2006-2016)*, Memorandum No. 188 (Tel Aviv: Tel Aviv University, Institute for National Security Studies, 2019).

<sup>18</sup> Meir Elran, *Israel's National Resilience: The Influence of the Second Intifada on Israeli Society*, Memorandum no. 81 (Tel Aviv: Jaffee Center for Strategic Studies, Tel Aviv University, January 2006).

In order to generate a broad definition, from which we will derive the specific definitions for each sub-type of resilience included in our proposed matrix, we present the following definition:

Resilience is the capacity of a system (an individual/community/state) to behave, during a crisis or following a disruption, in an adaptive way, in order to return to a previous or even improved level of functioning.

### A Multi-dimensional Matrix

The comprehensive definition mentioned above can serve as the core for several specific definitions, representing twelve distinct types of resilience which are created by the intersection of two relevant dimensions: *content* and *level*.

*The content dimension* in the forthcoming matrix is comprised of four domains: social, economic, political, and security/military. While, evidently, these are not the only domains in which resilient behavior can be studied (environment, climate, and culture are sampled examples of additional domains where resilience plays a major role), these four provide a better prospect for the examination across different levels, as will be demonstrated soon. The main *raison d’être* of the content dimension is the assertion that the resilience capacities required in these four domains are not necessarily identical. From an ontological perspective, each domain represents a distinct category.<sup>19</sup>

*The level dimension* involves three levels of reference: The individual, the community, and the state. The recent COVID-19 pandemic, affecting all countries severely across all continents, evidently advocates yet a fourth level – global. It is also possible to add various intermediate levels to this dimension as well, such as family, regional (or ethnic), or organizational level. However, in the current discussion, we will focus on these three fundamental levels.

The matrix generated from combining the *content* and the *level* dimensions produces twelve cells, each representing a sub-type of resilience (see Table 1).

**Table 1. A Multi-dimensional Matrix for Representing Twelve Types of Resilience.**

		Content Categories			
		Social	Political	Economic	Security
Level categories	Individual				
	Community				
	State				

<sup>19</sup> Christian Fjäder, “The Nation-state, National Security and Resilience in the Age of Globalization,” *Resilience: International Policies, Practices and Discourses* 2, no. 2 (2014): 114-129, <https://doi.org/10.1080/21693293.2014.914771>.

## The Individual Level

### I. Individual Resilience under Personal-Social Emergency

Here we focus on resilience at its mostly psychological meaning. Accordingly, the definition of individual (personal) resilience under social emergency is as follows:

The capacity of an individual to behave, during a personal social crisis or following disruption of a social nature, in an adaptive way, in order to return to a previous or even improved level of functioning.

This type of resilience can be demonstrated at extreme cases of loss (such as a death in the family<sup>20</sup>), family crises (e.g., divorce or painful separation), imminent threats (an emerging fatal disease, an impending lawsuit), or prolonged uncertainty.<sup>21</sup> Of special interest are studies attempting to unfold sources of resilience among individuals suffering post-traumatic stress disorders (PTSD) following severe disruptions.<sup>22</sup>

The most cited factors regarding this type of resilience are social support<sup>23,24</sup>, family stability<sup>25,26</sup>; relevant information and communication<sup>27</sup>; positive ap-

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<sup>20</sup> An Hooghe and Robert A. Neimeyer, "Family Resilience in the Wake of Loss: A Meaning-Oriented Contribution," in *Handbook of Family Resilience*, ed. Dorothy S. Becvar (New York: Springer, 2013), 269-284.

<sup>21</sup> William R. Saltzman, "The FOCUS Family Resilience Program: An Innovative Family Intervention for Trauma and Loss," *Family Process* 55, no. 4 (December 2016): 647-659, <https://doi.org/10.1111/famp.12250>.

<sup>22</sup> Christine E. Agaibi and John P. Wilson, "Trauma, PTSD, and Resilience: A Review of the Literature," *Trauma, Violence, and Abuse* 6, no. 3 (July 2005): 195-216, <https://doi.org/10.1177/1524838005277438>.

<sup>23</sup> Zehava Solomon and Avital Laufer, "In the Shadow of Terror: Changes in World Assumptions in Israeli Youth," *Journal of Aggression, Maltreatment & Trauma* 9, no. 3-4 (2005): 353-364, [https://doi.org/10.1300/J146v09n03\\_06](https://doi.org/10.1300/J146v09n03_06).

<sup>24</sup> Scott E. Wilks and Christina A. Spivey, "Resilience in Undergraduate Social Work Students: Social Support and Adjustment to Academic Stress," *Social Work Education* 29, no. 3 (2010): 276-288, <https://doi.org/10.1080/02615470902912243>.

<sup>25</sup> Helena Syna Desivilya, Reuven Gal, and Ofra Ayalon, "Long-term Effects of Trauma in Adolescence: Comparison between Survivors of a Terrorist Attack and Control Counterparts," *Anxiety, Stress, & Coping* 9, no. 2 (1996): 135-150, <https://doi.org/10.1080/10615809608249397>.

<sup>26</sup> Brian H. Walker et al., "Resilience, Adaptability, and Transformability in the Goulburn-Broken Catchment, Australia," *Ecology and Society* 14, no. 1 (2009): 12, <http://www.ecologyandsociety.org/vol14/iss1/art12>.

<sup>27</sup> Patricia H. Longstaff and Sung-Un Yang, "Communication Management and Trust: Their Role in Building Resilience to 'Surprises' such as Natural Disasters, Pandemic Flu, and Terrorism," *Ecology and Society* 13, no. 1 (2008): 3-17, <https://www.ecologyandsociety.org/vol13/iss1/art3>.

proach to life<sup>28</sup>; optimism<sup>29,30</sup>; ability to regulate emotions.<sup>31</sup> Cyrulnik found that individuals who have enjoyed good attachment relations in their childhood and who had a developed verbal ability are typified with a high level of resilience in their adulthood.<sup>32</sup>

## II. Individual Resilience under Political Emergency

Undoubtedly, political crises and prolonged political conflicts can have an adverse effect on individuals and challenge their personal resilience. Typical examples for this 'cell' from the last century include the black demonstrations and the civil-rights movement activities in the US during the 60s, the prolonged and deadly conflict in Northern Ireland, and the breakdown of countries like the Soviet Union, Yugoslavia, and Czechoslovakia. Accordingly, the definition of resilience for this particular 'cell' is as follows:

The capacity of an individual to behave, during a political crisis or following disruption of a political nature, in an adaptive way in order to return to a previous or even improved level of functioning.

The most cited factors regarding this type of resilience are identification with a higher entity (peoplehood, nation, ethos, religion); patriotism<sup>33</sup>; a deep justification of the conflict or its consequences; the role of a leading figure in the ongoing conflict, who may serve as a model to many individuals.

## III. Individual Resilience under Economic Emergency

The definition of resilience in this particular 'cell' is as follows:

The capacity of an individual to behave, during an economic crisis or following disruption of an economic nature, in an adaptive way, in order to return to a previous or even improved level of functioning.

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<sup>28</sup> Ji Hee Lee, et al., "Resilience: A Meta-Analytic Approach," *Journal of Counseling & Development* 91, no. 3 (July 2013): 269-279, <https://doi.org/10.1002/j.1556-6676.2013.00095.x>.

<sup>29</sup> Lee, et al., "Resilience."

<sup>30</sup> Akshay Malik, "Efficacy, Hope, Optimism and Resilience at Workplace – Positive Organizational Behavior," *International Journal of Scientific and Research Publications* 3, no. 10 (October 2013): 1-4, [www.ijsrp.org/research-paper-1013/ijsrp-p2274.pdf](http://www.ijsrp.org/research-paper-1013/ijsrp-p2274.pdf).

<sup>31</sup> Allison S. Troy and Iris B. Mauss, "Resilience in the Face of Stress: Emotion Regulation as a Protective Factor," in *Resilience and Mental Health: Challenges Across the Lifespan*, ed. Steven M. Southwick, Brett T. Litz, Boston University, Dennis Charney, and Matthew J. Friedman (Cambridge University Press, 2011), 30-44, <https://doi.org/10.1017/CBO9780511994791.004>.

<sup>32</sup> Boris Cyrulnik, *The Whispering of Ghosts: Trauma and Resilience* (New York: Other Press, 2005).

<sup>33</sup> Eyal Lewin, *National Resilience during War: Refining the Decision-Making Model* (Lanham, MD: Lexington Books, 2012).

An economic calamity may become even a greater threat to an individual, compared to a political one, to the extent of becoming a total disaster for many. This was the case, for example, in the American “Great Depression” during the 1930s, Germany’s economic collapse and hyperinflation following the defeat in World War I, or the 2011 East Africa drought.

The most cited factors regarding this type of resilience are level of continuous income; the scope of savings and occupational stability; education; and health services.<sup>34</sup>

#### **IV. Individual Resilience under Security (Military) Emergency**

We denote here attributes of resilience that characterize individuals, mostly civilians, who find themselves in war situations, or under prolonged military threat, repeated terror acts, or protracted security hazard. Such was the situation for thousands of individuals in New York City after the 9/11 attacks, during the ‘Troubles’ period in Northern Ireland, as well as in many countries in Africa, Central America, and South-East Asia throughout the recent decades. The definition of resilience in this particular ‘cell’ is as follows:

the capacity of an individual to behave during a security crisis (e.g., war, fatal riots, terror attacks, counter-insurgency) or following disruption of this nature, in an adaptive way, in order to return to previous or even improved level of functioning.

The most cited factors regarding this type of resilience are previous experience in similar situations; the amount of relevant and well-run information flow regarding the threats; amplified engagement in threat-related activities.<sup>35</sup> For individual victims of mass terrorist attacks, the support of family and community members can be crucial.<sup>36,37</sup> Similarly, support and guidance to the ‘Helpers’ (health and welfare agents) contribute to the resilience of both the helpers and the helped.<sup>38</sup>

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<sup>34</sup> Jerusalem Institute and the Ministry of Environmental Protection, “Sustainability Outlook 2030: A Vision of Sustainability to Israel – 2030,” 2012, accessed September 2, 2020, <https://jerusalemstitute.org.il/en/projects/sustainability-outlook-2030>.

<sup>35</sup> Reuven Gal and Richard S. Lazarus, “The Role of Activity in Anticipating and Confronting Stressful Situations,” *Journal of Human Stress* 1, no. 4 (1975): 4-20, <https://doi.org/10.1080/0097840X.1975.9939548>.

<sup>36</sup> Desivilya, Gal, and Ayalon, “Long-term Effects.”

<sup>37</sup> Helena Syna Desivilya, Reuven Gal, and Ofra Ayalon, “Extent of Victimization, Traumatic Stress Symptoms, and Adjustment of Terrorist Assault Survivors: A Long-term Follow-up,” *Journal of Traumatic Stress* 9, no. 4 (1996): 881-889, <https://doi.org/10.1002/jts.2490090416>.

<sup>38</sup> Reuven Gal, “Colleagues in Distress: ‘Helping the Helpers,’” *International Review of Psychiatry* 10, no. 3 (1998): 234-238, <https://doi.org/10.1080/09540269874826>.

## ***The Community Level***

### **V. Communal Resilience under Social Emergency**

The focus here is on communal social resilience – whether a small settlement, a particular social association (e.g., a church congregation), a tribe, or a neighborhood. The definition of resilience in this particular ‘cell’ is as follows:

The capacity of a community to behave, during a social crisis or following disruption of a social nature, in an adaptive way, in order to return to a previous or even improved level of community functioning.

The most cited factors regarding this type of resilience are social capital<sup>39,40,41</sup>; leadership<sup>42</sup>; a sense of belonging (also defined as place attachment<sup>43</sup>); organizational efficacy<sup>44</sup>; trusted communication resources.<sup>45</sup>

### **VI. Communal Resilience under Political Emergency**

There are numerous cases where communities are required to show their resilience under unique political crises. Typically, such crises may develop because of a severe dispute between rival leaders within a community, extreme internal conflicts on issues such as religion, education, or other communal disruptions. Accordingly, the definition of community resilience at the political level is as follows:

The capacity of a community to behave, during a political crisis or following disruption of a political nature, in an adaptive way, in order to return to a previous or even improved level of community functioning.

Quite like the previous ‘cell,’ the most cited factors regarding this type of resilience are: trust in the local leaders, solidarity, the strength of local-patriotism,

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<sup>39</sup> Daniel P. Aldrich, *Building Resilience: Social Capital in Post-Disaster Recovery* (Chicago: University of Chicago Press, 2012).

<sup>40</sup> Daniel P. Aldrich and Michelle A. Meyer, “Social Capital and Community Resilience,” *American Behavioral Scientist* 59, no. 2 (2015): 254-269, <https://doi.org/10.1177/0002764214550299>.

<sup>41</sup> Brian Walker and David Salt, *Resilience Thinking: Sustaining Ecosystems and People in a Changing World* (Washington: Island Press, 2012).

<sup>42</sup> Odeya Cohen, et al., “The Conjoint Community Resiliency Assessment Measure as a Baseline for Profiling and Predicting Community Resilience for Emergencies,” *Technological Forecasting and Social Change* 80, no. 9 (November 2013): 1732-1741, <https://doi.org/10.1016/j.techfore.2012.12.009>.

<sup>43</sup> Aldrich, *Building Resilience*.

<sup>44</sup> Padan and Elran, *The “Gaza Envelope” Communities*.

<sup>45</sup> Fran H. Norris, et al., “Community Resilience as a Metaphor, Theory, Set of Capacities, and Strategy for Disaster Readiness,” *American Journal of Community Psychology* 41, no. 1-2 (2008):127-150, <https://doi.org/10.1007/s10464-007-9156-6>.

the organizing ethos within the community, the will to fight, and the faith in the righteousness of the community's way.<sup>46</sup>

### **VII. Communal Resilience under Economic Emergency**

Communities, as independent entities, may undergo severe economic crises. A typical example is that of certain communities that have made their living predominantly on one specific source (a mine, a major industry, a corporation). When that source ceased its productivity, such communities collapsed into an economic catastrophe. Yet, some communities, under similar circumstances, managed to recuperate. The definition of resilience in this particular 'cell' is as follows:

The capacity of a community to behave, during an economic crisis or following disruption of an economic nature, in an adaptive way, in order to return to a previous or even improved level of community functioning.

The most cited factors regarding this type of resilience are labor and employment; human capital (education, food, health); housing, household, and social capital; Informal reciprocal relationships between individuals and families, as well as broader social networks, such as community organizations.<sup>47</sup>

### **VIII. Communal Resilience under Security (Military) Emergency**

This category does not necessarily pertain to a whole-war situation (in which case the community is just a component in a whole-State effort). Rather, we focus here on situations where a community, or several, are under a security danger or a military threat. The danger could be a terrorist attack or a lethal military attack explicitly aimed against this community. The definition of resilience in this particular 'cell' is as follows:

the capacity of a community to behave, during a security crisis or following a security-related disruption, in an adaptive way, in order to return to a previous or even improved level of community functioning.

In recent years, the concepts of "urban resilience" and "resilience design" have been developed in different cities worldwide, such as London and New York. These concepts refer to using the idea of resilience not merely to aid recovery from attacks but for incorporating counter-terrorism design principles to deter, detect, and delay potential attacks.<sup>48</sup>

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<sup>46</sup> Lewin, *National Resilience during War*.

<sup>47</sup> Patrick Martin-Breen and J. Marty Anderies, "Resilience: A Literature Review," (Brighton: Institute of Development Studies, the Resource Alliance and the Rockefeller Foundation, 2011), accessed September 2, 2020, [https://opendocs.ids.ac.uk/open\\_docs/handle/20.500.12413/3692](https://opendocs.ids.ac.uk/open_docs/handle/20.500.12413/3692).

<sup>48</sup> Antônio Sampaio, "Resilience Gains Ground in Counter-Terrorism Strategies," *Jane's Intelligence Review* 29, no. 12 (2017): 18-21.

The most cited factors regarding this type of resilience are adequate emergency preparedness and accumulated experience,<sup>49,50</sup> social capital, community efficacy, trust in local leadership and services (education, health, emergency), the ratio of ex-military service members in the community, and the level of trust in higher security authorities. The criticality of communal resilience as well as the diversity of its components generated countless attempts to assess and predict resilience indicators at the community level.<sup>51</sup>

### ***The State Level***

*National resilience – preliminary remarks:* While resilience at the individual and community levels is typically operational and frequently tangible, it becomes much more abstract and elusive at the State level. Furthermore, although dealing with resilience at the national level may postulate the inclusion of resilience resources from all the individuals and communities in the State, the “total sum” of the national resilience is not a simple, additive accumulation of all these resources.

### **IX. State Resilience under Social Emergency**

There are numerous examples of nation-wide crises that required the resilience of the entire state and its society: A case of top leader assassination, internal uprising, revolution or civil war; prolonged terror attacks; natural disasters, such as a severe tsunami, earthquake, environmental disaster, or a major pandemic. Accordingly, the definition of State resilience under social crisis is as follows:

the capacity of a State to behave, during a nation-wide social crisis or following disruption of a social nature, in an adaptive way, in order to return to previous or even improved level of social functioning.

The most cited factors regarding this type of resilience are national leadership, solidarity, patriotism, national ethos, willingness to fight and faith in the righteousness of the way, optimism.<sup>52</sup>

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<sup>49</sup> Mooli Lahad and Uri Ben-Nesher, “Community Coping: Resilience Models for Preparation, Intervention and Rehabilitation in Manmade and Natural Disasters,” in *Phoenix of Natural Disasters: Community Resilience*, ed. Kathryn Gow and Douglas Paton (New York: Nova Science Publishers, 2008), 195-208.

<sup>50</sup> Padan and Elran, *The “Gaza Envelope” Communities*.

<sup>51</sup> Susan L. Cutter, Christopher G. Burton, and Christopher T. Emrich, “Disaster Resilience Indicators for Benchmarking Baseline Conditions,” *Journal of Homeland Security and Emergency Management* 7, no. 1 (2010), <https://doi.org/10.2202/1547-7355.1732>.

<sup>52</sup> Lewin, *National Resilience during War*; Gabi Ben-Dor, Daphna Canetti, and Eyal Lewin, *The Social Component in National Resilience – The Israeli Home Front Leading up to the Fighting in Gaza, National Survey* (Haifa: Haifa University, 2010); Elran, *Israel’s National Resilience*; Reuven Gal, “Social Resilience in Times of Protracted Crises: An Israeli Case Study,” *Armed Forces & Society* 40, no. 3 (2014): 452-475, <https://doi.org/10.1177/0095327X13477088>; Shaul Kimhi, et al., “Individual, Community, and National Resilience in Peace Time and in the Face of Terror: A Longitudinal Study,”

## X. State Resilience under Political Emergency

This is the type of resilience exhibited by a whole society when a nation undergoes a political crisis. Typically, such crises happen at the eve—or the aftermath—of a political revolution or coup d'état. However, even dramatic political transformations without bloodshed may require societal resilience to adapt and return to normal functioning. Similarly, cases of major societal debates, lack of consensus, or extreme cases of political corruption can evoke an acute need for national-societal resilience. Accordingly, the definition of State resilience regarding a political crisis is as follows:

the capacity of a State to behave, during a nation-wide political crisis or following disruption of a political nature, in an adaptive way, in order to return to a previous or even improved level of functioning.

The most cited factors regarding this type of resilience are trust in political and public institutions<sup>53,54</sup>; patriotism, social integration, and optimism<sup>55</sup>; state's status and reputation internationally<sup>56</sup>; perceived trustworthiness of the information transmitted to the citizens<sup>57</sup>; political corruption<sup>58</sup>; corporate social responsibility.<sup>59</sup>

## XI. State Resilience under Economic Emergency

Relevant examples here are the “Great Depression” in the US during the 30s of the last century or the hyperinflation in Weimar Germany in the 1920s. Accordingly, the definition of State resilience under an economical crisis is as follows:

The capacity of a State to behave, during a nation-wide economic crisis or following disruption of an economic nature, in an adaptive way, in order to return to a previous or even improved level of functioning.

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*Journal of Loss and Trauma* 22, no. 8 (2017): 698-713, <https://doi.org/10.1080/15325024.2017.1391943>.

<sup>53</sup> Kimhi, et al., “Individual, Community, and National Resilience.”

<sup>54</sup> Shaul Kimhi and Yarden Oliel, “National Resilience, Country Corruption and Quality of Life: An International Study,” *The International Journal of Social Sciences and Humanities Invention* 6, no. 5 (2019): 5430-5436, <https://doi.org/10.18535/ijsshi/v6i5.05>.

<sup>55</sup> Kimhi and Oliel, “National Resilience, Country Corruption.”

<sup>56</sup> Fjäder, “The Nation-state, National Security and Resilience.”

<sup>57</sup> Starr Roxanne Hiltz and Jose J. Gonzalez, “Assessing and Improving the Trustworthiness of Social Media for Emergency Management: A Literature Review,” in *Norwegian Information Security Conference NISK 2012*, University of Nordland, Bodø, 19-21 November 2012.

<sup>58</sup> Kimhi and Oliel, “National Resilience, Country Corruption.”

<sup>59</sup> Peter Rodriguez, et al., “Three Lenses on the Multinational Enterprise: Politics, Corruption, and Corporate Social Responsibility,” *Journal of International Business Studies* 37 (2006): 733-746, <https://doi.org/10.1057/palgrave.jibs.8400229>.

The most cited factors regarding this type of resilience are a nation's GDP, national monetary reserves, annual inflation rates, employment rates, international rank (e.g., Gini Index); national financial-market policies.<sup>60</sup>

## XII. State Resilience under Security (Military) Emergency

This category refers to a situation where a State's resilience is ultimately challenged by a total war or extreme upsurge of terrorism. Our definition for State resilience under war-related emergencies is:

the capacity of a State to behave during a nation-wide security crisis or following a security-related disruption, in an adaptive way, in order to return to a previous or even improved level of functioning.

The most cited factors regarding this type of resilience are charismatic leadership; national ethos, collective fear, and fighting enthusiasm<sup>61</sup>; trust in security-related institutions (e.g., military, police); patriotism; optimism; and social integrity.<sup>62</sup> When focusing on military indices of resilience, the list is comprised of the military strength (material, moral and doctrinal) and military leadership,<sup>63</sup> perceived level of deterrence, national security strategy, and perception.<sup>64</sup>

Table 2 summarizes the most cited components for building resilience in each of the twelve 'cells' generated by our multi-dimensional matrix.

## Summary

This article refers to resilience as it was developed in the social sciences. It provides a conceptual framework for defining resilience, both generally and particularly, in relation to a specific domain. Our contention is that this framework can provide a set for possible measurements and assessments of resilience at different levels and domains. Furthermore, we hope that this conceptual framework will serve as an analytical mechanism for further examination of the many aspects of resilience and for comparative studies on this subject. In fact, we contend that using the conceptual matrix offered in this article will enable states to better learn and map their strengths and weaknesses, hence assisting them to

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<sup>60</sup> OECD *Economic Outlook, Interim Report March 2020*, OECD iLibrary, Volume 2019, Supplement 2, accessed September 2, 2020, [www.oecd-ilibrary.org/economics/oecd-economic-outlook/volume-2019/issue-2\\_7969896b-en](http://www.oecd-ilibrary.org/economics/oecd-economic-outlook/volume-2019/issue-2_7969896b-en).

<sup>61</sup> Lewin, *National Resilience during War*.

<sup>62</sup> Shaul Kimhi, et al., "Individual, Community, and National Resilience."

<sup>63</sup> Carmit Padan and Uzi Ben-Shalom, "The Place of Military Leadership in Israel in Light of the IDF Strategy," in *IDF Strategy in the Perception of National Security*, ed. Meir Elran, Gabi Siboni, and Kobi Michael (Tel Aviv: Tel Aviv University, Institute for National Security Studies, 2016), 165-171 [in Hebrew].

<sup>64</sup> Tim Prior, "Resilience: The 'Fifth Wave' in the Evolution of Deterrence," in *Strategic Trends 2018: Key Developments in Global Affairs*, ed. O. Thränert and M. Zapf (Zurich: Center for Security Studies, ETH Zurich, 2018), 63-80.

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guide their system’s attitudes and behaviors (including individuals, communities, etc.).

**Table 2. A Multi-Dimensional Matrix.**

		Content Categories			
		Social	Political	Economic	Security
Level Categories	Individual	Social support and family stability; Relevant information and communication; Positive approach to life; Optimism; Ability to regulate emotions; Genetic, epigenetic, developmental, psychosocial, and neurochemical factors; Good attachment and verbal ability in childhood	Identification with higher hierarchy; Patriotism; Justification of the conflict or its consequences; Role of leading figure	Level of continuous income; Scope of savings; Occupational stability; Education and health services.	Previous experience in similar situations; Relevant information; Optional participation in threat-related activities; Support of family and community members
	Community	Social capital; Leadership; Sense of belonging; Organizational efficacy; Adaptive ability; Trusted communication resources	Trust in local leadership; Ideology; Hope; Solidarity; Local patriotism; Community ethos; Faith in the righteousness of the community’s way	Labor and employment; Human capital (education, food, health); Housing and land; Social Capital; Informal reciprocal relationships; Community organizations	Emergency preparedness; Accumulated experience; Level of trust in high-security authorities; Proportion of military personnel in the community; Trust in local leadership; Existence of essential services

State	Leadership; Solidarity; Patriotism; National ethos; Willingness to fight; Faith in the righteousness of the Nation's way; Optimism	Trust in political and public institutions; Political stability; Patriotism, social integration, and optimism; Reliable information; International status; Lack of corruption; Corporate social responsibility.	GDP; National monetary reserves; Annual inflation rates; Employment rates; International rank (e.g., Gini Index); National financial-market policies	Charismatic leadership; National Ethos; Collective Fear and fighting enthusiasm; Trust in security-related institutions; Patriotism, optimism and social integrity; Military strength; Level of state deterrence; National Security perception
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from afar through using different strategies of governance. This process would, in the final analysis, help states to improve their various systems' abilities to build back better.

### Disclaimer

The views expressed are solely those of the authors and do not represent official views of the PFP Consortium of Defense Academies and Security Studies Institutes, participating organizations, or the Consortium's editors.

### Acknowledgment

*Connections: The Quarterly Journal*, Vol. 19, 2020 is supported by the United States government.

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