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A renewable light unto the nations? Modelling the limits of culturally appealing climate frames: a case study from Israel

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ABSTRACT

This study examines why some climate frames lose their discursive dominance over time despite successfully appealing to the cultural values and beliefs of the target audience. It argues that while 'cultural climate frames' are more effective in garnering public attention than frames emphasizing the science of climate change, they eventually lose strength if the value they promote no longer applies to the material context in which they communicate. The article uses Israel as its case study to examine why it officially abandoned its pro-climate policy in 2015 after enthusiastically promoting it since 2007. Critical discourse analysis of 58 semi-structured interviews with key policy actors, five public opinion surveys, media coverage, and government protocols identifies ten distinct frames that dominate Israeli climate discourse. It points to the 'climate techno-opportunity' framing as the most prominent among the ten frames due to its strong cultural appeal to both secular and religious Jewish audiences that commonly view Israel as a 'start-up nation' or as a 'light unto the nations.' The framing, however, ultimately lacked scientific validity or the resilience to survive the high-profile bankruptcies of several Israeli cleantech companies, and Israel's 2010 natural gas discoveries that provided a quicker solution to Israel's energy sector.

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1. Introduction

How climate change is framed can significantly affect public and policy actions towards climate mitigation efforts (Fletcher, 2009; Lakoff, 2010). Communicators wishing to promote or hinder climate-related policies thus compete to define and contextualize climate issues in public discourse through such frames. Popular frames that often gain dominance among different audiences include those that present climate change as a national security priority, a public health emergency, an economic opportunity, a religious obligation, or even a political conspiracy (Kahan et al., 2012). Studies argue that climate frames are most effective when they appeal to the audience's underlying cognitive structures, such as their culture, values, political ideologies, and religious beliefs, rather than expanding their knowledge by appealing to the science of climate change (Dietz et al., 2007; Norgaard, 2011). However, why and when 'culturally appealing' climate frames suddenly decline in popularity after already achieving dominance in public discourse is still an understudied topic (Aklin & Urpelainen, 2013; Werner & Cornelissen, 2014).

This study examines why some climate frames lose their discursive dominance over time by comparing three key factors that can determine the effectiveness and longevity of a dominant climate frame: (1) the frame's resonance with the target audience's values and beliefs, (2) the frame's use of strong

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underlying scientific validity, and (3) the frame's resilience to changes in material contexts. While this study confirms previous findings on how cultural climate frames indeed garner more resonance than science-oriented frames by appealing to preexisting values and beliefs, it argues that both sets of frames falter when they fail to adapt to sudden changes in the material environment and context for which they are communicating. These material changes may include a national economic downturn or security-related crisis that reshapes cultural beliefs or values away from those emphasized by the dominant cultural climate frame or, alternatively, the emergence of technological breakthroughs or economic booms that undermine the scientific validity of the dominant climate frame. This leads to the rapid decline of the frame from public discourse, unless it can convincingly link the cause of the new development back to climate change to remain hegemonic.

Israel offers an instructive case study to test this model due to the distinct reversal it experienced in its climate policies over the past decade. Initially, Israel displayed bipartisan enthusiasm toward advancing climate mitigation solutions. From 2007, the Israeli government substantially increased its investments in domestic cleantech industries, initiated annual exhibitions and international biennial trade fairs on climate-tech, and declared an official ambitious climate policy in 2013, facilitating its admission into the OECD and attracting substantial venture capital investment. By 2011, Israel boasted around 500 cleantech companies, nearly half specializing in clean energy (OECD, 2011).

Despite these advancements, the positive discourse surrounding the merits of cleantech in Israel dwindled significantly in the following years following a series of disruptive economic and political events. These included the discovery of offshore natural gas deposits in 2009, the high-profile failure of the Israeli electric vehicle company 'Better Place' and the flagship 'Ashalim' solar park, and the repeated eruption of violence in the Israeli-Palestinian conflict that shifted national attention and budgets to the defense sector. In August 2015, Israel officially canceled its climate policy. Subsequently, it reduced most tax incentives for solar power generation and other climate-related initiatives, leading to several bankruptcies within the solar energy and cleantech sectors and pulling Israel away from its official 2030 renewable energy goals.

This study uses a mixed method approach for critical discourse analysis to determine how climate change was framed in Israel during these eventful years between 2007 and 2015. The analysis is based on 58 semi-structured interviews with key policy actors, five nationally representative public opinion surveys, two focus groups, and content analysis of policy documents and media coverage ($n = 1263$). The study finds that preexisting societal worldviews and beliefs were predominant factors in shaping Israeli receptiveness to climate mitigation policies, even when detached from scientific validity.

The study identifies ten distinct framings of climate change discourse, with the 'climate techno-opportunity' framing emerging as the most dominant. This frame portrayed climate change as an opportunity to gain international economic and political benefits by developing and exporting clean-tech solutions. It resonated well among both secular Israelis who viewed Israel as a superior 'start-up nation,' as well as with religious Jews who saw it as an embodiment of the Jewish principle of 'Tikkun Olam' ('repairing the world'), manifesting Israel's calling as a 'light unto the nations.' While Jewish-Israeli support for climate action based on Israel's technological prowess eventually declined, other frames remained resilient, such as 'climate fatalism' that characterized the outlook of the marginalized Arab community in Israel and 'climate skepticism' that prevailed among Russian immigrants influenced by Russian media.

The study is structured as follows. It first provides background on framing theory in the context of climate change policy. Then, it reviews studies that point to scientific validity, cultural resonance, and resilience as the three key factors in achieving discursive dominance. It then presents the study's methodology and findings, briefly presenting the ten framings of climate change in Israeli discourse and detailing the dominant techno-opportunity frame. Next, the discussion section evaluates the techno-opportunity frame according to the proposed model, demonstrating its high resonance, medium scientific validity, and low resilience. Finally, the conclusion chapter presents the conceptual contributions of the new model, arguing that it can enable scholars to evaluate frames in their own context as they gauge public and government responses to the 2015 Paris Accord.

2. Background and model

Frames are interpretative storylines that shape how issues are understood, attributing problems, assigning responsibility, and proposing solutions by selecting and highlighting certain aspects of a perceived reality (Entman, 1993; Goffman, 1974). This selection process is influenced by cultural, social, and political contexts, which shape how issues are framed in the media and public discourse (Chong & Druckman, 2007). In the context of climate change, research on agenda-setting theory examine how media framing can either stigmatize or normalize environmental issues such as climate change discourse, thereby affecting public perception and policy responses to it (Nisbet, 2009). By shaping public awareness and guiding the interpretation of climate-related events, frames can generate concern and prompt action on climate change mitigation and adaptation (Bolsen et al., 2019; Moser & Dilling, 2007).

Viewing climate frames as potent tools of persuasion and policy action, scholars examine why certain climate and energy-focused frames gain dominance and become institutionalized while others diminish and become marginalized (Badullovich et al., 2020; Majdik, 2019). Being complex and abstract, climate change can utilize diverse framing options, drawing on cultural values, economic priorities, and perceptions of risk and technology (Brown & Huntington, 2008; Hulme, 2009). Perceptions of climate change can thus result from contradicting interactions between scientific realities, political and economic interests, and existing beliefs and worldviews (Fletcher, 2009; Nisbet, 2011; Weingart et al., 2000). Amsalem and Zoizner (2020) argue that while elites can try to frame issues around scientific facts, citizens often choose frames based on their existing beliefs and interests. Similar studies have argued that ideology and political identity wield greater influence over engagement with climate change than educational level or scientific literacy (Dietz et al., 2007; Stern, 2000). 'Culturally appealing' frames can thus be effective in mobilizing stakeholders, engaging media, building consensus and spur policy action, regardless of scientific validation (Kahan et al., 2012).

Despite the prominence of culturally appealing climate frames, the question of why and when such frames suddenly decline in popularity after already achieving discursive dominance in media and public opinion for a period of time is still an understudied topic (Aklin & Urpelainen, 2013; Werner & Cornelissen, 2014). To explore this question, studies have pointed to different characteristics that not only push climate frames to the center of public discourse, but also help it maintain discursive hegemony once it is achieved. This study suggests a novel model that collates these indicators into three key elements: (1) resonance with the audience's culture and beliefs, (2) strong underlying scientific validity, (3) and resilience to material changes in the environment in which the frame is communicated.

2.1. Resonance

Several studies find that climate discourse tends to adopt powerfully 'resonant' frames, referring to frames that appeal mainly to the values, beliefs and worldviews, social identity, and lived experience of the target audience, rather than to objective facts or educational messaging (Norgaard, 2011; Stoll-Kleemann et al., 2001). Such frames may present the need to mitigate CO2 emissions as a liberal moral imperative (Vu et al., 2019), a religious obligation (Salter & Wilkinson, 2024), a source for national pride (Abuhasirah & Salameh, 2024), or a critical part of a broader struggle for social or racial justice (Chen et al., 2023), among others.

These studies argue that to elicit the strong behavioral responses necessary for mobilization, effective frames resonate with what Lakoff (2010) calls an individual's 'underlying cognitive structure.' The media and trusted communicators thus deliberately and unconsciously construct climate frames to 'activate' these structures, with the aim of conjuring a strong emotional response that can mobilize individuals to demand tangible policy changes. This interplay between framing and the audiences' emotional reception of the message is thus a critical area of study within climate framing studies, emphasizing the role of resonance in how climate information is processed, understood, and acted upon (Shah et al., 2004).

2.2. Scientific validity

Despite the centrality of 'resonance' as a key factor in climate frame dominance, studies also indicate that an effective climate framing must be both resonant and 'scientifically validated,' or it risks losing public attention once confronted with facts that present it as ineffective or misaligned with the underlying cognitive structure that activated it (Cohen, 2013). Scientifically validated climate frames are those that both correctly identify the causes and characteristics of climate change as determined by scientific consensus (diagnostic frames), as well as encourage fact-based and empirically proven responses that are appropriate to the intended audiences' national, geographic, demographic, and technological circumstances (prognostic frames) (Tynkkynen, 2010). These causes and responses are detailed in the widely accepted recommendations of the IPCC (2021), such as switching to low-carbon fuel sources, reducing carbon emissions from buildings and transportation, and reducing personal electricity consumption. However, there is a debate over how to tailor these responses to different configurations, such as audiences in small countries with marginal contributions to global greenhouse gas (GHG) emissions, since they are still required to have an effective mitigation policy in place (Athanasiou et al., 2008).

Without scientific backing, resonant frames can become 'denial' frames if they mostly acknowledge the presented facts while giving them a different meaning (interpretative denial) or by minimizing/exaggerating their implications (implicatory denial) (Cohen, 2013). Denial frames that are resonant but not scientifically validated may include calls for symbolic actions that create a sense of accomplishment but offer marginal or no effect on climate change mitigation, such as banning plastic straws or recycling small batteries (Howlett & Kemmerling, 2017). Alternatively, they may push for solutions that are too expensive or not tenable to the targeted audience, such as developed nations pushing aggressive mitigation policies in developing countries. Scientifically valid climate frames may raise unpleasant emotions among the target audience, such as fear, guilt, helplessness, and a sense of loss, and thus inadvertently encourage 'resonant' denial frames that allow individuals to maintain a positive sense of self by emphasizing the worth of solutions that better align with their existing actions and world view (Wullenkord & Reese, 2021).

2.3. Resilience

A third key factor for evaluating the discursive dominance of culturally appealing climate frames is their resilience to material changes in the immediate environment of the audiences to which the frame is communicated (Werner & Cornelissen, 2014). As political, economic, or environmental situations change, resonant counter-frames can arise that erode the appeal of the existing hegemonic frame, even if they are scientifically valid at an earlier point in time (Aklin & Urpelainen, 2013). They may do so by either undermining the material or ideational underpinnings on which the current hegemonic frame relies, or by presenting an alternative set of conditions that make competing frames more valid or relevant in explaining or utilizing the change. Such material changes may include substantial economic downturns or a sudden deterioration in national security and political stability, causing a noticeable reprioritization of both government policies and public attention. Alternatively, they may include economic booms caused by the discovery of domestic natural resources, reducing the economic benefits of renewable energy integration and negating anxiety over future energy shortages.

A 'resilient' frame can weather such changes, maintaining discursive hegemony and support for a particular course of action over a relatively long period (Birkland, 1997). The more a frame is based on extrinsic opportunity and short-term material or ideational gains, the more it is vulnerable to new developments that either undercut these gains or provide a more compelling way to achieve them. Alternatively, the more the frame appeals to intrinsic ideology and long-term gains, the less reliant it is on short-term changes in material circumstances (Werner & Cornelissen, 2014). It is thus durable as it maintains its salience beyond peaks in the public attention cycle and focusing events, as well as adaptable to changing material or discursive conditions and opportunities by blending or adding new elements to it while maintaining its original resonance and

validity. Taken together, the three key elements of resonance, scientific validity, and resilience can offer a solid base on which to evaluate a dominant climate frame's longevity and decline.

3. Methodology

Our analysis focuses on the period spanning 2007–2015 in Israel, capturing the discourse surrounding the ascent and decline of Israel's climate policies pre- and post-2009 Copenhagen Accord. The climate frames were identified using a mixed methods approach, combining qualitative and quantitative analysis. It drew on a climate frames approach introduced by Fletcher (2009), as well as Leiserowitz's (2006) examination of how cultural distinctiveness reflects and perpetuates widely held beliefs and those of distinct interpretative communities. Utilizing both methods, this analysis sought to: (a) identify the most prominent frames by comparing their occurrences in a series of nationally representative surveys, media articles, and interviews with key policy influencers in Israel, (b) ascertain similarities of the identified frames with existing globally recognized climate frames identified in other studies, and (c) explore the validity, resonance, and resilience of each climate frame according to the criteria outlined in the previous section.

The aim of the quantitative research was to broadly identify and categorize different dominant societal frames of climate change that emerged in Israel during the examined period. This included statistical analysis of five nationally representative public opinion surveys and thematic coding of documents using Atlas-ti data analysis software. These documents included policy documents, conference transcripts and academic and NGO reports regarding climate change. Media articles ($n = 1263$) were selected from the six mainstream Israeli press sources – Yediot Aharonot, Ha'aretz, Israel Ha'Yom, Jerusalem Post and Ma'ariv – and the two most popular websites at the time – Ynet and NRG. Both the official documents and media articles were identified via a websearch using the search terms 'global warming' and 'climate change' in Hebrew and English between 2007 and 2015. These articles were inductively coded to develop a coding frame. An independent coder then second-coded a random sample of these articles to ensure coder reliability in the content analysis categorization process (Bauer, 2000). Cohen's kappa showed high inter-coder agreement (0.89).

The subsequent qualitative research then constructed a rich and complex interpretative and critical analysis of the main characteristics for each of the identified frames. To support the identification of these interpretative communities and analysis, the research used Atlas-ti software to deductively code interview transcripts, conference transcripts, focus group transcripts, NGO and academic reports, government protocols and reports, in addition to supporting academic literature. The interviews comprised of 58 semi-structured conversations by the author with Israeli policy influencers. Interviewees were identified during the research as helping shape Israeli climate discourse and policy, either through prominence in Israeli media and government protocols or through direct recommendations by other interviewees. These included journalists, academics, Knesset members, civil society organizations, entrepreneurs and civil servants working on climate, energy environment, development and innovation in the Israeli government. The interviews focused on their stance and solutions to climate change and their opinion regarding public sentiment toward the issue. The research also included transcripts of two focus group discussions conducted by the author with environmental professionals in the Arab city of Sachnin.

A full description of the collected data, including the complete list of interviewees, the methodology used for each data source, and the full results of all surveys and statistical analyses, appears in the study's supplementary file, which is divided into four sections. This includes an overview of the survey questionnaires and their detailed results (Section 1); a full content analysis of media sources (Section 2); an overview of the critical frame analysis based on survey and media results as well as a deductive coding of documents and transcripts (Section 3); and a description of two focus group studies and their questionnaires (Section 4).

4. Results: Israel's ten climate change frames

This section discusses ten prominent ways Israeli society framed and mobilized climate change between 2007 and 2015, highlighting each frame's validity, resonance, and resilience. We first provide a brief overview of

Table 1. Summary of the ten discursive climate frames in Israel 2007–2015.

Climate frame	Definition	Resonance	Validity	Resilience
1. Environmental threat	Climate change poses a threat to Israel's natural environment and biodiversity.	–	+	–
2. National Security threat	Climate change poses a national security threat by creating food shortages and regime collapse in neighboring countries.	–	+	–
3. Demographic threat	Climate change threatens Jewish majority by increasing climate refugees from neighboring countries.	+	–	–
4. Finite Pool of Worry	Climate change is a marginal problem compared to existential threats such as terrorism or the Iranian nuclear program.	+	–	+
5. Climate fatalism	Israelis can do little about climate change because it is a small state. No need to open this 'Pandora's Box.'	+	–	+
6. Academic skepticism	There needs to be more scientific certainty about the causes or effects of climate change for us to act on it.	–	–	+
7. Conspiracy skepticism	Climate change is a conspiracy invented by elite groups with vested interests.	+	–	+
8. Right-wing skepticism	Leftwing politics exaggerate climate change to promote a socialist economic agenda.	–	–	+
9. Jewish values	Climate change results from a moral and spiritual crisis; Jewish values encourage environmental protection.	–	+	+
10. Techno-opportunity	Climate change allows Israel to introduce technological innovation and gain economic and foreign policy benefits.	+	–	–

frames 1–9 and then offer a detailed evaluation of frame 10, which achieved a decisive discursive hegemony in Israel during the examined years. All frames are summarized in Table 1.

4.1. Overview of frames 1–9

The discourse on climate change in Israel often adopts security-oriented perspectives, mirroring global trends of securitizing climate issues through existential rhetoric (Brzoska, 2009). Israel's climate frames reflect its receptiveness to security-heavy arguments, evident in public discourse (Mitrani, 2013; Shapiro & Bird-David, 2017), with unique metaphors shaping their resonance and resilience (Stoll-Kleemann et al., 2001). For example, after the 2010 Carmel Forest fire, PM Netanyahu equated climate change with Israel's security concerns (MFA, 2010).

Climate threats to Israel are framed in three key contexts: (1) environmental threats, highlighting water scarcity and nature degradation; (2) national security threats, emphasizing geopolitical tensions due to droughts and food insecurity in neighboring regions; and (3) demographic threats to the Jewish majority from potential waves of climate-induced refugees (MEP, 2012).

However, these frames rarely lead to scientifically validated policies. For example, the 'demographic threat' frame, linking climate change to African refugee influxes and justifying border fences, resonates due to fears of a non-Jewish majority but lacks IPCC validation for addressing climate goals (MEP, 2012). Even frames that are more grounded in science, such as the 'environmental threat,' still depend on weather-related 'focusing events' for impact (Freimuth et al., 2007). These events may enhance framing resonance, yet their effect fades when public attention shifts, as seen with the 2016 forest fires, which were politically framed as arson by Palestinian terrorists rather than a weather-related event, despite very limited evidence (Hasson, 2016).

Another type of framing minimizes climate change's importance, emphasizing other pressing national concerns. The (4) 'finite pool of worry' frame, rooted in Israel's cultural prioritization of security (Abulof, 2014; Bar-Tal, 2001; Merom, 1999), was evident in a national survey before the Copenhagen conference, where climate change ranked lowest on the agenda (Michaels, 2012). Limited media coverage between 2007 and 2013 contributed to this limited salience (CIRES, 2012). This framing aligns with Israel's regional conflict and fluctuates with major political or security events. Similarly, the (5) 'climate fatalism' frame, acknowledges climate change but doubts the ability to address it, and is prevalent among Israel's Arab minority. Focus groups in Sachnin and interviews with key Arab policy influencers in Israel reveal a 'pessimistic environmental orientation' linked to broader disenfranchisement (Haller & Hadler, 2008; Tarabeih, 2012). Similar to the 'finite pool' frame, its prominence shifts with political events.

In contrast, skepticism frames challenge the premise of climate change. These include (6) 'academic skepticism,' emphasizing scientific uncertainty regarding the causes or effects of climate change; (7) 'conspiracy skepticism,' portraying climate change as fabricated by elites with vested economic interest in renewable energy, and (8) 'right-wing skepticism,' viewing the issue as a left-wing political tool which is purposefully exaggerated to promote a socialist economic agenda. While academic and right-wing frames are limited to niche groups (Avital, 2011), conspiracy skepticism is more widespread, particularly among Israeli immigrants reliant on Russian-language media (Michaels, 2012; Poberezhskaya, 2015).

Lastly, the (9) 'Jewish values' frame emphasizes moral responsibility and positions Israel as a 'light unto the nations' (Isaiah 42:6–7). Framing the climate crisis as a challenge to be met with Jewish values that encourage environmental protection, it promotes scientifically validated actions but resonates mainly with progressive religious communities (Tal, 2007).

The complexity of Israeli society is evident in how different community's 'own' climate frames, reflecting broader political alignments: Arab fatalism highlights marginalization, ex-Soviet skepticism ties to Russian identity, and 'Jewish values' critique secularism (Kramer & Bergman, 2010). While the latter promotes lifestyle changes, it remains peripheral, lacking broad resonance among most observant Jews due to its limited connection to daily religious practices.

4.2. Overview of frame 10: techno-opportunity

Our analysis identifies the 'Techno-opportunity' frame as a dominant discourse in Israeli society during the study period. This framework acknowledges climate change while emphasizing Israel's unique technological capabilities as a tool for global climate solutions, economic growth, and diplomatic gains. Embraced by politicians, business leaders, journalists, and environmentalists, it fostered a robust 'discourse coalition' that institutionalized its narrative (Hajer, 2005). By aligning with national interests such as economic development and international standing, this frame leveraged Israel's 'Start-up Nation' identity to establish broad appeal.

In politics, this framing gained prominence in 2007, championed by then-President Shimon Peres, who advocated for Israel's proactive role in global technological leadership. Peres emphasized the strategic importance of 'energy independence' through solar energy, a resource untied to geopolitical constraints (Peres, 2007, 2008). This narrative resonated with foreign dignitaries like Al Gore and Arnold Schwarzenegger, who praised Israel's renewable energy potential during visits, leading to cooperation agreements (Darel, 2009; Solomon, 2008).

The financial sector and business elites also promoted this framing, positioning 'green growth' as an engine for national economic development. Israel's long-standing expertise in technological innovation supported the rebranding of dryland technologies – such as drip irrigation, desalination, and afforestation – as cleantech. Bank of Israel Governor Stanley Fischer argued that a green economy could diversify exports and integrate Israel into the OECD (Levy, 2010). Similarly, Haim Shani, chair of the governmental climate committee, highlighted green growth's potential for environmental and industrial progress (MEP, 2010). Advocates also pointed to solar water heaters as a proven climate technology (Moskowitz, 2011).

Environmentalists and renewable energy advocates echoed these economic arguments. At a 2008 conference titled 'Climate Change as a Corporate Opportunity,' the director of an Israeli environmental NGO coalition stated that Israel could turn the climate crisis into an economic growth engine (Sheffer, 2008). Similarly, Isaac Berzin, founder of GreenFuel Technologies, argued that Israeli innovations could lead transformative global efforts against climate change (Berzin, 2009).

Global economic incentives further accelerated cleantech development. The 2008 spike in oil prices, peaking in September 2008, prompted discussions on oil-substitution technologies. Prime Minister Netanyahu highlighted the strategic importance of such technologies, declaring in 2009 that finding alternatives to oil was Israel's top priority across security, environmental, and geopolitical dimensions (Benn, 2011). This vision translated into increased funding for biofuels, electric vehicles, and other oil-substitution technologies (State of Israel, 2011).

The 'Techno-opportunity' frame also positioned climate innovation as a means to enhance Israel's international image. Following the Second Intifada (2000–2005), Israel faced challenges in reshaping its national branding (East West Communications, 2009; Hassman, 2008). At a 2010 Ministry of Foreign Affairs seminar, Deputy Foreign Minister Daniel Ayalon argued that branding Israel as a leader in environmental contributions could counter de-legitimization efforts and improve its global image (Ayalon, 2010). Cleantech became a cornerstone of Israel's development assistance programs, with its agricultural and irrigation technologies deployed in Africa, and so it saw an opportunity to further improve its image by leading in the field of climate change solutions (Axelrod, 2010).

Internationally, Israel aimed to secure financial backing for its climate technologies while positioning itself as a regional and global model. President Peres's, 2009 Copenhagen address invited nations to use Israel as a 'pilot plant' for environmental innovation. This strategy persisted at subsequent climate conferences, including the 2015 Paris Climate Conference, where Prime Minister Netanyahu highlighted Israel's technological ingenuity: 'Israel is a small country with big ideas … We are eager to share them with you' (Coren & Schuster, 2015).

5. Discussion: evaluating the effectiveness of the techno-opportunity frame

Due to its pervasive presence in Israeli discourse during the examined period, the discussion section centers on the factors contributing to the effectiveness of the techno-opportunity frame. We will elucidate its alignment with our proposed model, which comprises resonance, scientific validity, and resilience. Through this lens, we contend that the frame gained traction due to its resonance with national interests, identity, and religious values, resonating widely across diverse sectors of the Israeli populace. However, its alignment with scientific validity was only partial, as Israeli discourse largely ignored Israel's vulnerability to climate change, and the validated CO_2 mitigation measures identified by local and international climate experts. It instead focused on its self-created image of a 'start-up nation' that leads the global cleantech industry and should thus focus on exporting mitigation technologies rather than implementing them in its own economy. However, these aspirations were not compatible with the actual performance and competitiveness of its cleantech sector, and it quickly declined following a series of high-profile bankruptcies. It was then replaced with a different aspiration for economic prosperity through the export of fossil fuels, following the discovery of major offshore natural-gas fields.

Consequently, we argue that the 'techno-opportunity' frame could also be construed as a form of 'denial frame,' characterized by an unwarranted optimism regarding climate change resolution without commensurate scientific underpinning. This misalignment severely diminished the frame's resilience to a series of material changes that occurred in Israel during that period, including a temporary economic decline, a deteriorating security situation, and the discovery of natural gas. The following discussion breaks down this analysis to each of the three key elements that ensure the staying power of a hegemonic climate frame.

5.1. Resonance

Israel's climate techno-opportunity frame resonated with the public due to its optimistic perspective and alignment with national identity and values. As a 'gain frame,' it tied climate action to broader national interests, promoting optimism over negative narratives (Spence & Pidgeon, 2010). This frame offered a more optimistic perspective than alternative narratives by transcending negative framings and emphasizing comprehensive benefits. The frame also incorporated a robust 'identity frame' linked to Zionist ethos, religious metaphors, and a shared belief in Israel's global mission. Zionism, deeply influenced by early twentieth-century modernism, has historically emphasized technological optimism and a 'love of homeland' as central to its environmental ideology (Golan, 2004; Tal, 2008).

Science and technology have been pivotal to Zionist ideology, serving as justification for its claim to the Holy Land (Efron, 2014). The Israeli public perceives technological innovation as foundational to national success and actively supports public investment in R&D (Arad & Alon, 2006; Golan, 2004; Yaar, 2006). 78% of Israelis in a 2009 survey believed that Israel's achievements in science and technology, relative to its size, rivaled or surpassed those of most developed countries (Siegel-Itzkovich, 2012).

Innovation within the cleantech sector was also perceived as possessing significant 'brand appeal,' aligning with Israel's multifaceted efforts to enhance its global image. In 2015, Israel launched a campaign titled 'Israel – spirit of creativity,' which highlighted solar panels and desalination as symbols of national ingenuity (MFA, 2015). These efforts emphasized traits such as 'chutzpah' (audacity) and teamwork honed during military service, framing Israelis as entrepreneurial problem-solvers. The campaign reinforced Israel's narrative of being a 'light unto the nations,' drawing on Jewish values like Tikkun Olam (repairing the world) and 'Jewish ingenuity,' which depict Israelis as innovative and adept in science (NewTech, 2010). Senor and Singer (2009) attribute Israeli innovation to risk-taking and military experience, though these elements coexist with broader structural supports, including historical involvement in hi-tech, skilled immigrant engineers from the former Soviet Union, and government subsidies (Efron, 2006; Getz, 2010).

5.2. Scientific validity

Israel stands out as one of the few nations significantly investing in cleantech R&D, and it accordingly focused much of its discourse toward the economic and diplomatic opportunities these investments could create with growing global attention on climate change. However, largely absent from both popular and political discourse was a substantive fact-based discussion on Israel's own vulnerability to climate change and the necessary mitigation and adaptation measures it must implement itself, as specified even in Israeli government-commissioned research based on IPCC recommendations (e.g. Ayalon et al., 2015; McKinsey & Co, 2009; MEP, 2015). Taboo topics such as curbing population growth, for example, have been especially overlooked (Tal, 2016).

Climate change discourse in Israel has predominantly served to lend rhetorical weight to other political objectives or reinforce national identity rather than prioritizing CO_2 emission reductions or adaptation efforts. Instead, Israeli industry leaders repeatedly emphasized Israel's marginal responsibility toward CO_2 reduction, amounting at the time to 0.19% of total global manmade emissions (McKinsey & Co., 2009). Accordingly, when Israel announced its intent in 2010 to formulate a comprehensive climate policy aligned with the Copenhagen Accord, the proposed measures focused primarily on short-term economic gains rather than CO_2 reduction objectives, as opposed to the recommendations of the IPCC (Michaels & Tal, 2015).

Moreover, the fervor surrounding Israeli investment in cleantech R&D as a replacement to the discourse on CO_2 mitigation eventually outstripped the actual capabilities and performance of the industry. Despite its self-purported image as a 'start-up nation' and a global leader in cleantech, Israel quickly fell behind most metrics in terms of competitiveness in key aspects of the sector following the bankruptcies of Better Place and other high-profile companies. Existing Israeli technological innovations are undeniably making a concrete contribution to global endeavors to reduce GHG emissions and facilitate climate adaptation. Israeli water companies are prominent exporters of drip irrigation, wastewater reduction, and desalination technologies, commanding a 30% share of the global irrigation market. Additionally, Israeli agricultural technologies, including drought-resistant and salt-tolerant crop varieties, greenhouse technologies, and desert aquaculture, are widely sought worldwide to support development in arid regions (Invest in Israel 2010). However, given the intricate nature of technology adoption, whether Israeli cleantech can realize its potential remains uncertain. The climate techno-opportunity frame was partially predicated on the promise of numerous startup ventures that floundered, alongside a domestic solar energy sector that encountered difficulties during the 2010s. By 2015, Israel generated a mere 3% of its electricity from renewable sources, significantly trailing the OECD average of 18% (MEP, 2015).

Consequently, we posit that Israel's climate techno-opportunity framing ultimately falls under the category of a 'denial' frame. It directs attention towards technological interventions and potential future innovations rather than effective national policy measures to curb current emissions, under the assumption that Israel's efforts will provide little benefit to global mitigation, despite scientific consensus stating otherwise. Moreover, it shifts responsibility towards corporate entities rather than individuals or the government, allowing Israelis to derive national pride from the contributions of Israeli scientists and entrepreneurs to climate change mitigation rather than feeling guilt over their limited personal efforts and weak political engagement. Overall, Israeli discourse focused more on national images of technological dominance and the benevolence of

assisting other countries in reaching climate mitigation goals, rather than on existing scientific consensus on the directions that should be followed to achieve energy system transformation in its own domestic sector.

5.3. Resilience

The resilience of the techno-opportunity frame weakened as Israel's energy landscape shifted with new developments and challenges in cleantech. In 2013, major natural gas discoveries reshaped energy security priorities, introducing a 'gas opportunity' frame emphasizing gas exports and technological innovation. This narrative mirrored the earlier 'green growth' frame's financial and geopolitical prospects but was bolstered by the declining economic appeal of solar energy following the 2014 global oil and gas price downturn. Criticism of the high production costs of projects like the Ashalim solar power plant and the 2013 bankruptcy of Better Place, a prominent electric vehicle company, further dampened enthusiasm for cleantech.

Between 2009 and 2013, Noble Energy and Israeli partners discovered significant gas reserves in the Tamar, Leviathan, Karish, and Tanin fields, collectively holding an estimated 950 BCM of natural gas. These reserves, projected to meet Israel's electricity needs for decades, were rapidly developed, with existential rhetoric used to securitize the discoveries and justify swift exploitation (Fischhendler & Nathan, 2014). The energy discourse shifted to debates over gas exports versus domestic use, with little focus on renewable alternatives (Teschner & Paavola, 2013). During a 2015 parliamentary debate, Prime Minister Netanyahu emphasized gas exports' geopolitical benefits, stating, 'The ability to export gas makes us more immune to international pressure' (Bar-Eli & Zrahiya, 2015). Environmental advocates focused on risks related to extraction infrastructure rather than opposing fossil fuel reliance, framing natural gas as a cleaner alternative to coal.

Renewable energy support declined as the government prioritized gas. Concerns about monopoly loss by Israel's electricity utility and reluctance to subsidize foreign solar PV producers hindered solar energy expansion. Objections related to land use and biodiversity further complicated solar field development (Rosenthal et al., 2011). The government halted new licenses for large-scale solar projects in 2011 and reduced feed-in tariffs for medium-sized fields (Ahituv, 2012). These shifts, coupled with bureaucratic obstacles, led to a significant contraction in the solar sector, with the number of companies dropping from 130 in 2010 to 60 by 2015 (Wainer & Hirtenstein, 2015).

6. Conclusion

This paper investigated the mechanisms through which specific climate frames attain discursive dominance by resonating with deeply ingrained values in the prevailing worldviews and why they ultimately falter despite their resonance. Israel's case underscores the limitations of advocating climate framings that primarily emphasize extrinsic and immediate political and economic benefits offered by renewables without adequately addressing the urgency of tackling the climate crisis. Doing so makes it easier for interest groups to portray fossil fuels, particularly offshore natural gas, as superior in terms of security, geopolitics, cost-effectiveness, and reliability.

Paradoxically, the prevalent dominance of the 'techno-opportunity' climate frame that initially encouraged Israel's interest in climate mitigation technologies in the years preceding the discovery of natural gas, ended up serving as an advantageous platform for shifting policy focus towards gas and away from renewables. Since the techno-opportunity frame did not consider the benefits of domestic GHG emission reduction in Israel itself as a significant rationale for promoting solar or other clean technologies, the fact that natural gas, a fossil fuel, still emitted greenhouse gases was not a prominent concern for Israeli policymakers. Consequently, the issue of GHG emissions was not addressed when framing natural gas as an immediate solution to Israel's national and energy security imperatives. Instead, the techno-opportunity frame exclusively highlighted the economic and geopolitical advantages Israel stood to gain from exporting its cleantech technology globally. Therefore, the prospect of exporting natural gas offered a more immediate and tangible opportunity to achieve comparable benefits, particularly as several high-profile cleantech companies in Israel began to present disappointing economic results.

The discursive dominance of the techno-opportunity frame was thus fundamentally weakened in Israel, not only by the unforeseen gas discoveries, but by the similar materialistic framing that both renewable energy and natural gas received. This 'frame resonance' framework demonstrates that while certain politically opportunistic or economically-focused framings of climate change policy may garner strong support in the short term, they are unsustainable without robust intrinsic scientific validity and resilience to economic and political shifts in the long term.

On a broader conceptual level, the paper contributes to the literature on the 'politics of unsustainability' and the role of discourse and rhetoric in masking a state's inability to transition away from fossil fuel dependency. While many studies focus on political, economic, and material barriers to meaningful state-driven climate change mitigation, this paper contends that societal perceptions of climate change are crucial determinants of a state's response. These perceptions are deeply entwined with identity and social status, as well as less flexible characteristics like religion and political ideologies in particular social groupings. However, even rigid characteristics may shift or be sidelined by material economic or political changes. Thus, being mindful of cultural perceptions and responses to various framings of the issue, alongside their response to political and technological factors, enriches our understanding of both individual and policy inaction.

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