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Transforming an Environmentally Pernicious Holiday into an Environmentally Healthy Festival

An Intervention Study of Lag B'Omer

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Abstract

While the environmental impacts of religious and secular holidays are increasingly characterized, interventions to reduce their effects are modest and poorly understood. Israel's Lag B'omer holiday has emerged as a major air pollution source due to the common practice of lighting bonfires. We implemented and evaluated an intervention amongst Israeli school children in which they were challenged to design and adopt alternative “environmentally friendly” celebrations that maintained the holiday spirit. The interventions were observed and a mixed method approach applied to study implementation involving, interviews with teachers, parents and students as well as an ex-post questionnaire answered by participants. Children supporting environmental celebrations displayed higher levels of environmental behavior, and environmental hope than those preferring bonfires. Those who voted for an environmental alternative, against the majority, also displayed higher levels of self-control skills. The study confirms the potential of well-designed, environmentally friendly holiday celebrations to replace environmentally deleterious ones.

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Keywords

holidays – environmental education – self-control skills – environmental hope – environmental behavior – intervention study – positive psychology

1 Introduction

Is it possible to celebrate holidays while keeping their spirit and at the same time reducing their environmental footprint? Can we encourage sustainability and creativity by re-thinking our customs and tapping into the core values of holidays? What are the factors that influence the success of such an initiative?

A relatively unstudied area of modern life is the effect of holidays on the environment. The carbon footprint of some 30 million American Christmas trees, for example, is roughly a third of the 50 million artificial trees sold in the U.S. alone (Rudolph, 2010). An American thanksgiving dinner on average produces 44 pounds of carbon dioxide emissions (Cohn, 2017) which when multiplied by millions of households becomes significant. The U.S. Environmental Protection Agency reports that the fireworks ignited on the fourth of July increase particulate pollution in urban areas by 42% (Rettner, 2015). Addressing these unintended consequences of modern celebrations constitutes a daunting challenge for educational and environmental policy makers.

This study provides a preliminary answer to these questions, using a specific case study of an intervention aimed at reducing environmental impact of a particularly environmentally harmful holiday in Israel—L'ag B'Omer. It finds that by applying insights from the field of positive psychology, not only can the damage from environmentally harmful celebrations be ameliorated, but creative alternatives can actually facilitate creativity and nurture positive character traits among school children.

Every country and society has its idiosyncratic celebrations and ecological ramifications. Israel offers an extreme example of the interface between religious or secular festivals and environmental damage. The establishment of a new Jewish state brought with it the renewal of many holidays which had either been forgotten or marginalized during the two thousand year period when Jews were in exile. Indeed, according to the secular ideology of the Zionist pioneers in the early 20th century, the renewal of these holidays was a happy manifestation of national renewal and validation of the makeover of the Jewish nation as indigenous people in its own land. Holidays, such as Passover and Succoth

(Tabernacles), which had primarily sported a religious character in Diaspora, now became agrarian and ecological celebrations. Long-forgotten festivals with links to the land of Israel and its history were revived. Most notable of these is Tu B'shvat, the traditional birthday of trees and L'ag B'Omer, (literally, the 33rd day of the Omer) the focus of this article.

The renewed menu of Jewish holidays in Israel brings with it very specific environmental and health impacts. Koren et al. report an association between variegated rates of proximal hip fractures and Jewish observance and holidays. For instance, on Saturday the Jewish Sabbath—Saturday when considerable economic activity comes to a halt, there are fewer incidences of fractures. By way of contrast, during the festive spring festival of Passover, fracture rates increase dramatically (Koren, 2014). Air pollution (as well as hip fractures) drop precipitously on Yom Kippur, the most solemn day on the Jewish calendar, when driving in Jewish neighborhoods is almost non-existent. The holiday of L'ag B'Omer, on the other hand, has emerged as an air pollution disaster.

The origins of L'ag B'Omer are somewhat arcane. Ostensibly the holiday is part of the 49 day annual period when Israelites are commanded to “count the Omer” between the festivals of Passover and Shavuot, a ritual set forth in the book of Leviticus. One way to understand the entire Omer counting ritual process involves a more symbolic perspective: The festival of Passover celebrates the political liberation of the Israelites from oppressive slavery under Pharaoh in Egypt. Seven weeks later on the calendar, the Shavuot holiday, focuses on the events at Mount Sinai, where the Israelites received the “Torah”, with its many laws and normative expectations for living. Hence the counting of the Omer serves as a bridge between the release that freedom brings and the collective and individual responsibilities that come with it. While there are innumerable explanations for the spiritual significance of this daily counting process, the Biblical itself is basically reticent. The text states “when you enter the land which I am giving to you and reap its harvest, you shall bring the first sheaf of your harvest to the priest ... And from the day on which you bring the sheaf of wave offering—the day after the Sabbath—you shall count seven weeks”.

The period during which the Omer is counted, is typically a mournful period in the Jewish calendar, when men don't shave and weddings are postponed. Notwithstanding its somber character the 33rd day of this period traditionally is designated to be entirely different: a day of wild celebration, when the entire nation stays out late into the night enjoying a general agenda of merrymaking and bonfires.

Many reasons have been given for the sudden burst of celebration. A passage in the Talmud reports that during the days of the illustrious Rabbi Akiva (50–132 A.D.) there was a plague that killed thousands of his religious students

during the counting of the Omer, allegedly divine retribution for the poor interpersonal relations pervasive at the time. On the 33rd day of the counting of the Omer, the plague miraculously ceased.

Rabbi Shimon Bar Yochai, another venerated spiritual leader of the period reportedly died on the 33rd day of the counting of the Omer. Bar Yochai was born into an esteemed family of Jewish scholars in the early second century. His father was thought to be something of a pacifist and took a dim view of the revolt which was supported by Rabbi Akiva, Bar Yochai's teacher and arguably the most influential sage of his time. Bar Yochai shared Akiva's disdain for the Romans. On one occasion, he was recorded as refusing to acknowledge the merits of their bathhouses, bridges and markets as the motivation behind their construction was merely self-serving. When word got back to the Romans of his impudence they condemned him to death—but Bar Yochai fled with his son to a secret cave where they allegedly hid for thirteen years.

According to Jewish tradition, during this period Bar Yochai wrote *The Zohar* (*Sefer ha-Zohar*), the definitive Jewish mystical tome (even though many modern secular scholars attribute to the book to 13th century Spanish scholar Moses de Leon) (Scholem, 2007) Written in Aramaic, the Zohar contains philosophical queries about hidden aspects of the Bible, the nature of God, creation and the mysteries of the human soul (Dan, 2006). As a result the L'ag B'Omer festival has emerged in many Jewish communities as a celebration of mysticism. For instance, every day of the Omer has been granted a unique spiritual characteristic, with the thirty-third day considered to be a day of "splendor within a week of splendor."

Urban legend has left most Israelis associating the holiday with *Bar Kochba* the legendary Jewish rebel who led a revolt against the Roman empire around the years 132–136. Indeed, L'ag B'Omer songs include tributes to the fighter from days of old. One tradition suggests that the occasional victories of his irregular Jewish military forces were communicated to other communities through giant torches lit on the hillsides. Yet, this notion appears to be apocryphal and there is no real evidence of a clear Bar Kochba / L'ag B'Omer connection. Notwithstanding the historic accuracy of the association, Bar Kochba's defiant uprising became a model for Zionists during the early twentieth century, who wished to redefine Jewish identity as that of a fighter. And so the revival of the L'ag B'Omer festival in modern Israel was contrived in this spirit. For instance, making bows and arrows as an annual reenactment of Bar Kochba's rebellion, remains a favorite holiday ritual among secular, Israeli children.

Whatever the reason, for most ordinary locals—even religious ones—the holiday has become synonymous with bonfires. It is the one day of the year when the whole country engages in pyromania. Bonfires are lit throughout the

country by people of all ages. Jews of all religious persuasions convene outdoors to enjoy the flames and associated campfire food on balmy late spring evenings. The highest concentration of them can be found among the religious masses who make a pilgrimage to Shimon bar Yochai's gravesite in Meron—with the fires presumably symbolizing the spiritual light that emanates from his wisdom.

While L'ag B'Omer's actual historic origins may be ambiguous among the Israeli public, any such confusion in no way affects its popularity. The holiday is an annual opportunity for schools, neighbors and old friends to burn any and all wood that can be collected. For weeks in advance youth collect spare lumber, create towering tipi-stands of timber and marvel through the night as they enjoy the timeless mysteries of staring into a fire. Israel's beaches and every vacant lot become a site where friends congregate and wood blazes.

2 L'ag B'Omer, Environmental Impacts

L'ag B'Omer's ritual infernos may not have been recognized as a health hazard in the past. But as Israel grew from a country of one to eight and a half million people (Tal, 2016), the density of fire sites grew exponentially. So, did the resulting concentrations of air pollutants during the L'ag B'Omer holiday period. As early as 2008, Israel's Ministry of Environmental Protection sounded a warning about the elevated levels of air contamination. Already a decade ago, the high concentration of bonfires produced twice the allowable levels of air pollution that were subsequently associated with cases of respiratory illnesses and asthma. The Knesset, Israel's parliament's Interior Committee suggested that year that municipalities demarcate specific areas for bonfires so that warnings could be posted about the dangers of burning plastic bags, garbage and glass (Ilan, 2008).

But such symbolic appeals appear to have had little effect. By 2015, air pollution concentrations on the evening of L'ag B'Omer had emerged as an environmental scourge and significant health insult: Israel's Ministry of Environmental Protection reported an 1800 percent increase above permissible pollution concentrations (Israel Ministry of Environmental Protection, 2015). In 2016, pollution levels were also measured far above levels prescribed pursuant to Israel's Clean Air Law. Of particular concern were concentrations of fine particles (pm 2.5), a particularly egregious pollutant responsible for over 1000 premature deaths each year in Israel. In the Kiryat Haim neighborhood, north of Haifa, concentrations of pm 2.5 were over 1100 percent higher than background levels on a normal evening; in the port city of Ashdod, over 1000 times higher (Gross-

man, 2016). In recent years, L'ag B'omer is the day when Israel's emergency hospitals are most filled with emergencies (burns; asthma attacks; respiratory difficulties; vomiting; etc.). Sensitive populations, such as the elderly and asthmatics are particularly affected.

Israel's environmental ministry makes token efforts to respond. For instance, it sponsors special alternative events, such as a recent program in the religious city of Bnei Brak. But apparently, it has met with very limited success. NGOs also seek to do their part. *Adam Teva V'din*, the Israel Union for Environmental Defense (2016), for example, posts tips for reducing L'ag B'omer's environmental impacts on its website, calling on the public to abstain from throwing plastics and other hazardous materials into the fire—as they increase the toxicity of the resulting pollution exposures. But such calls fall far short of systematic program to transform a religious and cultural ritual that has turned into a public health risk.

From a theoretical point of view, if we consider celebrating L'ag B'omer with bonfires as an environmentally harmful behavior, we can draw from theories explaining factors that influence environmental behavior in order to analyze how such alternatives might become more effective. Following Linda Steg's Goal Framing Theory (Steg, 2009; Lindeberg, 2007), three main goals influence our environmental behavior:

- the hedonic goal—meaning that the behavior should be fun and easy;
- the gain goal—meaning that the behavior will not cost excessively and unreasonably tax future resources (like money, respect, status); and finally
- the normative goal—meaning that people generally want to do the right thing.

Obviously the 'right thing' in the present context would be to celebrate 'L'ag B'omer' in an alternative *non-harmful* manner. While designing an alternative to the traditional form of celebration, one should take into account how all three of these goals should be addressed.

Our research involves the first attempt to create a replicable intervention to change the dynamics of the L'ag B'omer experience. A pilot intervention in an Israeli elementary school was implemented where children were engaged in a competition to propose alternative celebration rites. The remainder of the study explores the results of the intervention using mixed research methods: results from our participatory observation in the intervention, interviews with selected teachers, parents and the student environmental committee participants and a short quantitative analysis of the results of an ex-post questionnaire that was answered by the students in the *treatment* and *non-treatment* classes. Using these methods, we explore variables that encourage preferences for environmentally-friendly, alternative celebration as well as associated cave-

ats (such as different characteristics of the participating students, teachers and parents). The following section tells the story behind the intervention, as it describes its design and implementation. Subsequently, we describe the methods used for analyzing this case study followed by results from all methods. We conclude the paper with insights from the findings and recommendations for future interventions.

3 Designing and Implementing an Alternative Environmentally Friendly Celebration

For over a decade, Israel's Ministry of Environmental Protection has sponsored a program whereby schools can be accredited for environmentally conscientious performance (Sagy & Tal, 2015). *Green Schools* are certified for a variety of environmental activities, among which is the establishment of a group of students that is in charge of leading environmental activities in school under the guidance of a teacher. In one Green School in central Israel, an alternative for celebrating the L'ag B'Omer holiday was designed and implemented by the student group, '*Environmental Leaders*', with the aid of their advising teacher and the environmental committee of the central Parent Teacher Association (PTA) of the school.

In the beginning of 2016 the students' *Environmental Leaders* group convened a joint session with their advising teacher and the environmental committee of the PTA. The children designed their action program for the year and the PTA committee members offered assistance and cooperation. Among their proposed activities was an attempt to celebrate L'ag B'Omer in a more environmental friendly manner. In the subsequent months, in order to implement the plan, the children researched L'ag B'Omer's origins, discussed potential collaborations with the PTA and considered several options that would be feasible and would appeal to their peers.

One major concern of the children was that L'ag B'Omer celebrations are so popular that their peers would be disinclined to give them up unless the alternative was particularly engaging. Accordingly, considerable thought was dedicated to designing an appealing alternative. This required the assistance of the PTA as it involved considerable expenses. The group decided that its plan should involve a competition among all the classes of the school to design an environmentally friendly, alternative celebration and that the prize had to be attractive. After discussions, the students decided that skipping one day of school for a private movie screening (to be enjoyed by the winning class) in the local theater would be attractive.

The first step in the process involved convincing the PTA to donate a sum of approximately \$1500 for the prize. Surprisingly, the proposal encountered considerable resistance from within the PTA. The winning's class missing school was not the problem. Apparently, parents were unwilling to concede a cherished tradition involving a night of bonfires. After explaining why it was so important to support an initiative that came from the children, however, the majority of PTA representatives voted in favor of the funding.

After gaining the financial support required for this initiative, the children had to come up with a more specific plan. They decided to launch a competition that would be judged by three criteria: environment, health and creativity. All classes were challenged to design and implement a new way of celebrating L'ag B'Omer. Their proposals were to be ranked according to the extent to which their designed program was creative (keeping the spirit of the holiday in a creative way), healthy (promoting the health of the children), and environmentally friendly (aimed at protecting the environment).

The environmental leaders group prepared a power point presentation detailing the terms of the competition, adjusted to different age groups (first-second grade, third-fourth grade and fifth-sixth grade). The competition rules stipulated that each class have a democratic, secret-ballot, vote as to whether it wanted to participate in the competition or to have the regular bonfire celebration. Classes that chose the competition were required to commit to foregoing any bonfires during the holiday. In order to participate they had to submit a report, describing their chosen alternative (with pictures) and explaining how it related to the three categories of health, environment and creativity. The competition committee was comprised of representatives from the school's central PTA, the children in the *Environmental Leaders* group and their advisor.

Due to reasons that will be elaborated in the next sections, only four classes opted to submit the necessary documents for participation in the L'ag B'Omer competition. Two of the alternative celebrations included nocturnal hikes, illuminated by lanterns where legends of the holiday would be highlighted. The two other participating classes organized unique and creative celebrations making it difficult for the competition committee to choose a winner: One class organized art works on the topic of L'ag B'Omer, a game of transferring messages via various media (e.g., through body language) and finally a 'trivia' game regarding the holiday.

The winning class organized a production that specifically addressed all three aspects of the competition: the selected location for the celebration was an archeological site with remains from the Roman occupation of Israel; the celebration theme involved communicating in an alternative way to bonfires—using an ancient method of flying kites that contain special messages; The chil-

dren worked together cooperatively, treating each other respectfully, learning from the L'ag B'Omer legend about the plague that infected the abusive religious students. Finally, the celebration ended with the design of a peace treaty with the Romans—reflecting an aspiration to end all conflicts.

The environmentally friendly alternative took into consideration health aspects as well, celebrating in nature with the fresh air near the sea. The children ate healthy food: fruits, vegetables and oven baked potatoes (following the L'ag B'Omer tradition). Regarding the environmental aspects of the celebration, the class report required the use of recycled and natural materials for all activities. Activities were held at a nature reserve, allowing the children to take notice of the sunset and flowers and strengthen their connection with nature.

4 The Role of the Teachers, the Students and the Parents in Implementing the Alternative

Implementation of alternative celebrations required cooperation between three groups of actors—students, parents and teachers. Previous research in environmental policy suggests that collaboration among relevant actors attribute to effective policy implementation (Kerret & Menahem, 2016). Hence, the collaboration among the actors was addressed through interviews with all three groups of actors. Of particular interest was understanding the experience of the students who chose the environmentally friendly alternative celebration. Voting for or against bonfires can be ascribed to various motivations. As it was framed by the *Environmental Leaders* group as the “environmentally friendly alternative”, this case offers a unique opportunity to understand the factors influencing environmental choices of children in complex situations. The following section elaborates on the main variables influencing environmental behavior of students, generating hypotheses regarding variables that influenced students to vote for, or against an environmental alternative.

5 Factors Explaining Environmental Behavior of Students

5.1 *Environmental Hope*

Previous literature suggests three main factors that influence environmental choices of children: environmental hope, the ratio between positive and negative emotions (positivity ratio), and self-control skills (Kerret, Orkibi & Ronen, 2016). In particular, recent studies showed association between increased hope for the future of climate change or the state of the environment and adoles-

cents' environmental behavior (Ojala, 2012, 2015; Kerret, Orkibi & Ronen 2016). Drawing on Ellis's (2001) model linking thought and behavior and Ojala's (2012) findings that hope constitutes an important and unique cognitive factor in promoting adolescent environmental behavior, Kerret, et al. (2014) propose that students will tend to engage in EB if they are cognitively hopeful regarding the feasibility of making a difference in their environment. The conceptualization of hope adopted in the current paper is based on a tripartite conceptualization of environmental hope (Kerret, Orkibi, Ronen, 2014). Two components are drawn from Snyder's hope theory, which is based on the assumption that human actions are goal-oriented (Snyder et al., 2002). According to this theory, pathway thinking refers to the perceived capabilities required for generating workable routes leading to what one wants to happen. Alternatively, agency thinking refers to the motivation to use those routes to achieve what one wants to happen. Thus, Snyder's theory suggests that hope consists of one's perceived goal-oriented will along with the ways envisioned for achieving environmental objectives.

The third component in our tripartite conceptualization of environmental hope is drawn from Ojala (2012), who suggests that social trust is particularly important for the study of hope in an environmental context. This component refers to hope related to a sense that other individuals or groups can be relied upon (e.g., politicians, legislators, industrial sectors, nongovernmental organizations, other citizens, government representatives, etc.) to collaborate in seeking solutions to environmental problems. Indeed, social trust has been acknowledged in the literature as an essential component in addressing environmental problems (Dawes, 1980; Van Vugt, 2002). Hence, in the current study we assume that the level of environmental hope influenced the choices of students regarding their decision in favor of bonfires or the environmental alternative.

5.2 *Positivity Ratio*

Previous studies have associated high levels of hope with positive outcomes. Hope correlates positively with better personal adjustment, greater life satisfaction, and higher academic achievements (Gilman, Dooley, & Florell, 2006; Marques, Pais-Ribeiro, & Lopez, 2011). At the same time, it correlates negatively with risky behaviors, depressive symptoms, and negative developmental trajectories (PadillaWalker, Hardy, & Christensen, 2011; Schmid et al., 2011). In particular, research also links hope with high positive emotions and low negative emotions in adolescents (Marques & Lopez, 2014; Vacek, Coyle, & Vera, 2010).

More specifically, Kerret et al. (2014) propose that the ratio between positive and negative emotions (positivity ration: PR) is related to environmental behav-

ior through the mediation of hope that simultaneously improves both hedonic goals (experiencing more positive than negative emotions) and normative goals (exercising environmental behavior). This model suggests that students will engage in more environmental behavior and will experience higher PR when they have elevated environmental hope. This model is empirically supported in a recent study of junior high students (Kerret, Orkibi, Ronen, 2016). Following these findings, we assume that an association exists between high levels of environmental hope and high levels of PR in students. We also assume positive correlations between the choice of the environmental alternative and PR.

5.3 *Self-Control Skills (scs)*

Self-Control Skills (scs) is another personal skill that has been found to be related to environmental behavior and is linked to a willingness to make choices that are at odds with the majority view among children's peers. We draw on Rosenbaum's (1990) conceptualization of scs as a learned repertoire of goal-directed skills that enable people to act upon their aims, reject temptation, delay gratification, and overcome difficulties relating to thoughts, emotions, and behaviors. scs may be a precondition for the role of environmental hope in mediating the association between green engagement and environmental behavior because exhibiting environmental behavior requires individuals to resist anti-environmental forces within themselves and within society (Klockner, 2013). This role includes withstanding peer pressure (e.g., to light bonfires), rejecting easy temptations, overcoming interfering thoughts (e.g., "We're never going to win the competition anyway"), deferring immediate gratifications (e.g., having to think and plan an elaborate alternative), and coping with distress (e.g., facing ridicule from peers for choosing the environmental alternative), often by using self-talk and self-reinforcement (Ronen & Rosenbaum, 2010).

In the context of mental health, studies have reported positive associations between scs and positive personal outcomes. Findings significantly associate scs with more positive emotions, PR, and social support, as well as with fewer negative emotions (Orkibi, Hamama, Gavriel-Fried, & Ronen, 2015; Orkibi & Ronen, 2015; Orkibi, Ronen, & Assoulin, 2014) as well as lower hostility, aggression, physical violence, and delinquent behavior (Hamama & Ronen-Shenhav, 2012; Ronen, Abuelaish, Rosenbaum, Agbaria, & Hamama, 2013). Longitudinal research has also shown that high scs predicted better social competence and more socially appropriate behavior (Dennis, Brotman, Huang, & Gouley, 2007; Eisenberg, Hofer, & Vaughan, 2007; Eisenberg et al., 2003). Recently, Kerret et al. (2014) proposed a model linking students' scs with both their environmen-

tal behavior and PR. This connection was reinforced in an empirical study of adolescents (Kerret, Orkibi & Ronen, 2016). Hence, we anticipated that SCS would be positively associated with PR and environmental hope in the studied students. We also hypothesized a connection between the choice of the environmental alternative and the level of SCS.

6 Choosing against the Majority of Class—the Link between Resistance to Peer Pressure and Environmental Behavior

A particular level of exerting SCS is required when anti-environmental behavior is prevalent or in the face of pressure to act in anti-environmental ways (i.e., in the present case, lighting bonfires despite the associated environmental hazards). Students' ability to exert resistance to peer pressure is an important moderator for carrying out environmental behavior (Kerret et al., 2014). During adolescence, the peer group plays a crucial role in psychosocial development, a function of youngsters' increasing need for autonomy and individuation from family figures (Steinberg, 2013). This critical need for social belonging and social support (Frisén, 2007) leads adolescents to want to alter their behavior to fit in, thereby increasing their susceptibility to peer pressure (Steinberg & Monahan, 2007). The social influence of peers has been identified as particularly important in determining adolescents' EB (Dostie-Goulet, 2009; Ojala, 2012; Pancer, Pratt, Hunsberger, & Alisat, 2007). We suggest that voting against the majority of the class requires particularly high SCS.

7 Conceptual Model and Hypotheses

Based on the theoretical premises described above, we hypothesized a connection between environmental behavior, SCS and PR. We assumed that choosing the alternative holiday celebration constitutes a de-facto demonstration of environmental behavior. We also anticipated a high correlation between environmental behavior, environmental hope and the choice of the alternative celebration. Following previous research, we also expected to find a connection between SCS, environmental hope, PR and preferring the environmental friendly celebration. The connection between SCS and a student's choice is assumed to be highest when students vote against the majority of their class.

8 Methods

A mixed method approach was applied to study the implementation of the environmentally friendly alternative celebration: results from our participatory observation in the intervention, as well as interviews with selected teachers, parents and the environmental committee participants were supplemented by a short quantitative analysis, based on the results of an ex-post questionnaire that was answered by the students in the school.

8.1 *Participatory Observation*

As a member of the environmental committee of the Central PTA, one of the authors was involved in the design and implementation process of the intervention, described above.

8.2 *Interviews*

Interviews were conducted with homeroom teachers of the six classes that participated in the survey. In addition, selected parents from different classes and the central PTA were asked for their opinion regarding the intervention. All members of the Environmental Leaders group and the accompanying teacher were also interviewed.

8.3 *Sample*

Immediately after the L'ag B'Omer holiday all 15 teachers of grades 3–6 were approached and asked to allow their students to participate in a 45 minute survey regarding their L'ag B'Omer experience. Although first and second graders also participated in the competition, they were deemed to be too young to fully understand and answer the survey. Only six of the teachers agreed to have their classes participate within the two weeks following the holiday. Most other teachers declined due to excessive teaching loads and various other activities that prevented their participating. We discontinued the survey after two weeks as we wanted to ensure the freshness of the experience and vivid memories from the holiday celebration among respondents. All in all, 160 children from 6 classes answered the survey.

8.4 *Measures*

Students completed four self-reporting measures that will be detailed below in addition to two open questions asking them what they liked or didn't like about bonfires.

Environmental behavior. We used a 10-item environmental behavior scale that was previously used in Kerret et. al. (2016) based on a modified version

of a scale previously employed with a sample of Israeli elementary and high school students (Negev, Sagy, Garb, Salzberg, & Tal, 2008). The scale underwent content, criterion and construct validation as well as revisions for internal consistency (Tal, Peled, & Avramovich, 2010). Students rated the frequency with which they performed the 10 described activities related to resource conservation, consumption patterns, and environmental activism (e.g., “I write letters or sign petitions for saving the environment”) on a Likert scale ranging from 1 (*never*) to 5 (*always*). Past reliability of the scale was relatively high ($\alpha = .83$) similarly to the current study $\alpha = .801$.

Positivity ratio. To measure the ratio of positive to negative emotions, we used the 30-item Scale of Positive and Negative Experience (Laurent et al., 1999), with 15 items testing for the positive emotions subscale (e.g., joyful, calm, happy) and 15 items for the negative emotions subscale (e.g., sad, afraid, mad), scored separately. Students rated the frequency at which they experienced the 30 emotions during the last few weeks on a Likert scale ranging from 1 (*very rarely or never*) to 5 (*very often or always*). Laurent et al. reported internal consistency (Cronbach alpha) of 0.87 for the positive subscale and 0.92 for the negative subscale. In the current study, the α was set at 0.858 for the positive emotions and 0.874 for the negative emotions. To compute students' PR, the mean score for the positive emotions subscale was divided by the mean score for the negative emotions subscale (see for example Orkibi et al., 2014).

Environmental hope. To measure environmental hope, we used the 6-item Environmental Hope Scale (Kerret, Orkibi, Ronen, 2016) that was based on the Children's Hope Scale (Snyder et al., 1997) that was slightly modified to reflect hope regarding the environment. The scale comprises three agency items and three pathways items. For example, a pathway item was “I can think of many ways to *save the environment*,” and an agency item was “Even when others give up about *an environmental* problem, I know I can find a solution.” Students rated how often each statement described their experience on a 6-point Likert-type scale ranging from 1 (*none of the time*) to 6 (*all of the time*). The reported past reliability of the scale was $\alpha = .86$ (Kerret, Orkibi, Ronen, 2016). In addition, we added three more items to account for trust in other members of society (following Ojala, 2012). Accordingly, an example of a trust item was: “I trust scientists and researchers to find solutions to environmental problems”. In the current study reliability of the scale was $\alpha = .82$.

Self-control skills. The 25-item Children Self-Control Scale was designed to assess children SCs (Rosenbaum & Ronen, 1991), including problem-solving skills, attentional control (i.e., distraction), cognitive reframing, delay of gratification, and use of self-talk and self-reinforcement. Participants rated items (e.g., “When I feel I'm about to burst, I say to myself: ‘Stop and think before you act’”) on a scale ranging from 1 (*not characteristic of me at all*) to 6 (*very char-*

acteristic of me), with higher scores indicating higher SCS. The scale's reliability in the current study was $\alpha = .758$.

9 Data Analysis

9.1 *Results from Interviews with Parents, Teachers, and the Student Environmental Leader Group*

Of all 22 classes in the school only 4 agreed to fully implement the intervention, perform the alternative celebration and submit the report to the evaluation committee. In some classes, lack of participation was due to a democratic vote of the students against the alternative as they wanted to celebrate the holiday with bonfires. In retrospect, in at least four additional classes, the majority of students voted in favor of the environmental alternative but the parents refused to cooperate and held the bonfire anyway. We interviewed representatives from the PTA in these classes to understand why they chose not to comply with the decision of the majority of the central PTA as well as with the majority vote in their children's classes.

We received three main explanations: The first was that the PTA had planned the celebration of L'ag B'Omer at the beginning of the school year and they did not want to change the plan at a later date. The second was that the parents themselves loved bonfires and it was difficult for them to give them up. They also regretted that their children who would miss the bonfire experience, even though they preferred the environmental alternative. The third explanation was that the proposed intervention was too complicated and required them to think outside the box, taking on an unfamiliar and daunting task.

The teachers themselves were generally in favor of the initiative and supportive. They thought that the process of designing an alternative celebration was positive, particularly for a school that supported and promoted creativity. They commented that some of the students from the *Environmental Leaders* group were not properly prepared for delivering the message to their peers. Although they were in favor of the concept of "children teaching children", they thought it would have been better if teachers themselves were involved in the process, discussing the basic idea with the class before presentation by the *Environmental Leaders* group.

Students from the *Environmental Leaders* group were somewhat disheartened by the low participation rates in the competition and were particularly disappointed with the non-supportive response from some of the PTA members in some of the classes. They were also disappointed since most of them had to participate in a regular bonfire celebrations due to their class decision or due to the lack of support from parents.

TABLE 1 Reasons students liked a bonfire

Reasons for enjoying fire	Voted for fire	Voted for alternative	Total
Enjoyed hanging out with friends	84 (76.4%)*	29 (25.7%)*	113 (70.2%)
Enjoyed the fire itself	30 (27.3%)	13 (26.0%)	43 (26.7%)
Enjoyed finding the logs for the fire	23 (20.9%)	9 (18.0%)	32 (19.9%)
Enjoyed the food	36 (32.7%)	23 (46.0%)	59 (36.6%)
Enjoyed staying awake at night	38 (34.5%)	16 (32.0%)	54 (33.5%)

*p<=.01

9.2 Results from the Quantitative Survey

An analysis of the questionnaires was conducted in order to study differences between children who voted for the bonfire and those who voted for the environmental alternative. We describe the general correlations between the main variables evaluated as well as the open questions regarding what children liked or disliked about bonfires.

9.2.1 What Do Students Like and Dislike in Bonfire Celebrations?

Of the 161 students who answered the questionnaire, 110 voted for the traditional bonfire (68.3%), while 50 students voted for the alternative (31.1%) while one student did not complete the question.

Students were asked (an open question) to mention the reasons why they liked having a traditional bonfire celebration. Their answers were coded according to the main themes revealed in their answers (See table 1).

Surprisingly, the most popular reason mentioned for enjoying the bonfire (70.2%) was not the fire itself, but enjoying the company of their friends (table 1). It was also the only reason mentioned with statistically significant differences between the group of students who voted for the bonfire and those who voted for the environmental alternative. In the group of the students who voted for the bonfire this answer was more prominent (78.7%) than in the groups of students who voted for the alternative (60.3%) ($\chi^2=5.588$, sig=0.018, df=1). Interestingly, in both groups the fire itself is not indicated as a primary reason for enjoying bonfire celebrations, with only an average of 26% of students indicating this as a reason for appreciating bonfires.

The main reason students do *not* like the fire is the smoke: some 65.2% of respondents singled out the smoke as a reason for not enjoying the bonfires (see table 2). Surprisingly enough, a statistically significant higher num-

TABLE 2 Reasons students did not like a bun-fire

Reasons for not enjoying fire	Voted for fire	Voted for alternative	Total
The smoke	80 (72.7%)*	25 (50.0%)*	105 (65.2%)
The sand	16 (14.5%)	12 (24.0%)	28 (17.4%)
The noise	23 (20.9%)*	5 (10.0%)*	28 (17.4%)
The pollution	19 (17.3%)	10 (20.0%)	29 (18.0%)

* $p < .01$

TABLE 3 Means, standard deviation, and intercorrelations

	SCS	PR	Hope	EB	M	SD	N
SCS	—				95.73	15.94	158
PR	.247**	—			1.76	0.74	154
Hope	.355**	.228**	—		36.31	8.77	151
EB	.310**	.215**	.583**	—	33.58	7.72	146

** $p < .001$;

ber of students who voted in favor the bonfires cited both the noise ($\chi^2=7.871$, sig=0.005, df=1) and the smoke ($\chi^2=2.834$, sig=0.092, df=1) as reasons for not liking fires.

The results regarding liking and disliking bonfires, suggest that the main reasons students enjoy bonfires is not the actual fire but other factors associated with it, mainly spending time with their friends. In addition, many students indicated that they did not enjoy the smoke and the noise in the fire celebrations. These insights might direct us to seek a more appealing alternative celebration and to market it in ways that will be perceived as more compelling by the students. The designers of the current intervention were unaware of these insights and might have better integrated such components into celebration models that appeal more to school children.

9.2.2 The Connection between PR, Hope, SCS and Environmental Behavior

Although the design of the alternative was at the school level, some of the children voted for the alternative while others voted for the traditional celebration. In order to better understand what influenced the children's choice we con-

ducted a survey within the school to study the main variables influencing environmental behavior. The results show that all four variables are significantly positively correlated.

9.2.3 Differences in the Children Who Voted for the Bonfire and Those Who Voted for the Alternative

When considering the entire sample differences between those who voted for the environmental alternative and those who voted for the bonfires, a one-way ANOVA shows significant differences only in variables directly related to environmental choices: environmental behavior [$F=(1,141)=5.60$ $p=.019$] and environmental hope [$F=(1,146)=14.68$ $p=.000$]. No significant differences in SCS and PR were observed.

9.2.4 The Special Traits of Children Who Voted for the Environmental Alternative, against the Majority

When we select only classes that voted for bonfire celebrations we see a difference between those who voted for fires and those who voted for the environmental alternative in all four independent variables (self-control skills [$F=(1,76)=13.69$ $p=.000$], PR [$F=(1,76)=6.32$ $p=.014$] environmental hope [$F=(1,74)=21.18$ $p=.000$] and environmental behavior [$F=(1,73)=19.45$ $p=.000$]). This confirms our assumption that it requires self-control skills to vote against the prevailing inclinations of peers.

10 Conclusions, Limitations and Future Lessons

This study describes an initial attempt to implement an environmentally friendly way of celebrating holidays. It describes an intervention aimed at substituting a well-established, venerated celebration that at the same time causes major environmental and health hazards. The present study offers an analysis of one case study conducted under idiosyncratic circumstances. The experiment should be replicated in other schools in order to generalize the results. Nevertheless, much can be learned from the success of this initiative (the launching of the competition, the execution of the intervention throughout an entire school) as well as from the relatively limited participation of the classes in the environmentally friendly alternative celebration.

The first lesson from the current study is related to the components of the suggested alternative. In such complex circumstances, where an alternative for a well-established beloved ceremony is sought, the specific design of the alternative is of particular importance. For the alternative to thrive, it should be

appealing and accepted by a significant portion of the school community. In designing a feasible and compelling alternative, theories explaining environmental behavior can be of great assistance.

Implementing Steg's (2009) goal-framing theory for designing an effective alternative celebration for L'ag B'Omer produces two important insights: First, in order to elevate a normative goal to a higher level, the alternative should be openly reframed as a new component of society's existing, accepted norm. Efforts should be made to convey the message that accepting the environmental alternative constitutes the "right thing to do". In other words, it involves a new, normative option for society (or on a smaller scale, for the school or even the class). Second, the two additional goals influencing behavior should be addressed as well. In the case of the L'ag B'Omer celebration, the *gain goal* does not have as much impact as the *costs* for either celebration, which should not differ much.

Arguably, one of the most influential aspects of designing an effective alternative would be related to its hedonic component: how much fun and how convenient is the environmentally friendly celebration? A first step towards the design of such an alternative would be deconstructing what makes the bonfires and traditional celebrations so compelling as opposed to what factors reduce the enjoyment of the traditional celebration. The design of an effective alternative need to leverage the benefits and reduce the drawbacks of the traditional celebration in order to create an even more appealing alternative in terms of the hedonic goal.

In the current study, we conducted a survey among the main 'clients' of the celebration—the children. The survey was conducted promptly after the celebration took place so that the experiences from the celebration would still be fresh. Results are quite encouraging as they reveal that the primary reasons for enjoying the traditional celebration are not related to the pernicious aspect we wish to change (the bonfires themselves), but rather to other factors, in particular "hanging out" with friends at an informal outdoor event. This finding is particularly important as it is identified as the main reason among children who voted for bonfires for preferring the traditional celebration. Accordingly, an effective alternative also should stress the component of 'having fun with friends'. In the current design, this element was not highlighted at all, as the survey was conducted only after the holiday and this input was not available for the designers of the alternative.

In addition, many students indicated that they do not enjoy the smoke and the noise involved with bonfire celebrations. This position was even more common among the group that preferred the traditional celebration. Here, again a 'smoke and noise-free, fun with friends' alternative has the potential to be more

appealing to the children. While additional research is required to generalize the results of the current study, initial findings confirm the potential acceptability among elementary school children of a well-designed environmental alternative.

From a multi-stakeholders perspective (Kerret & Menahem, 2016), in order to make a major societal change, as many relevant stakeholders as possible should be involved. In the current intervention, it was obvious that at least the parents and the teachers should have been more involved. When the environmental committee and the supervising teacher designed the intervention, they did not realize that parents would present significant opposition and did not take their entrenched opinions into account.

From the interviews with the parents, it also seems that the environmental alternative was difficult for them to embrace—conflicting with their own hedonic goals. A major caveat revealed in the interviews was that the design of innovative initiatives requires considerable preparation and time. Starting preparations for such an intervention at the beginning of the school year might have yielded higher participation rates. Although teachers are not traditionally involved in designing the celebration (due to insurance issues and directives from the Ministry of Education), they might also be an important actor, influencing children's perception of accepted norms and helping to facilitate the design of creative alternative celebrations by the children. In the current experiment teachers essentially were not involved, which may have had a negative influence on the results.

Regarding the acceptance of alternatives by the children, two interesting results emerged from this study. First, the two factors that were correlated with the children's choice were the level of their environmental hope and the level of their general environmental behavior. These results support previous studies that link the level of environmental hope with environmental behavior (Kerret, Orkibi & Ronen, 2014, 2016; Ojala, 2012). The current study adds to the extant studies by connecting environmental hope not only to self-reported environmental behavior, but to de-facto exhibition of environmental behavior that requires both a change in traditional behavior and a presumed sacrifice (not having the traditional beloved bonfire celebration). Hence, one important environmental education policy lesson that may be gleaned from the results of the research is the importance of deliberately highlighting elements of environmental hope in the curricula.

The second and arguably even more interesting lesson involves the personal traits of the children who voted for the environmental alternative against the majority of the class. This specific group of children differs from their peers, exhibiting higher levels of environmental hope, environmental behav-

ior, self-control skills and positivity ratios. In addition to providing new data to support previous studies regarding the variables correlated with reported environmental behavior, these results also highlight the importance of self-control skills in resisting peer pressure to choose a non-environmental alternative.

Hence, an important contribution of this research is the additional empirical evidence it provides about personal traits being tightly intertwined with environmental behavior. From an environmental policy perspective, an important question that should be asked: how can the characteristics of the children who voted for bonfire celebrations be influenced? This small-scale study further supports the premise that in order for environmental education to be effective, positive psychology insights should be integrated into the curricula. Particularly, self-control skills should be promoted, inculcating children to stand up for their own views, even when they are at odds with the majority of their peers.

Further research should design even better alternatives for L'ag B'Omer celebrations based on the lessons from this study, and consider their impacts. The influence of designing innovative environmental alternatives on the inventive thinking and creativity of children should be explored. Additional interventions, seeking to 'green other holidays' should also be conducted, evaluated and compared in order to create a more holistic understanding of how to upgrade traditional celebrations to include environmental considerations and practices. This study provides additional support for the important role of hope in promoting positive outcomes and in particular, environmental behavior.

In recent years, support for environmentalism in some countries has become an increasingly partisan, political matter (Cruz, 2017). The consensus of the past about universal regard for protecting the planet has been replaced by polarized divisions about the existence of critical global environmental challenges and the legitimacy of a common response. Any attempt to amend traditional holiday celebrations that cause environmental damage must be cognizant of the new highly-charged dynamics and approach the challenge with caution, creativity, wisdom and a strategy for including all stakeholders, especially school children. The present intervention studied can ultimately be seen as a source of optimism and hope, providing a proof of concept for the feasibility of celebrating environmentally pernicious holidays in new, environmentally friendly ways.

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