

Down to Air

Palestinian Memories and Practices of Weather Relatedness

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Shatti ya dinya shatti, shatti 'aqar'it sitti
[Rain oh world, rain on the bold head of my grandmother]

—Proverb¹

Among Palestinian refugees in the Jordan Valley (Jordan), the memory of a weather calendar known as *murba'nia* – a winter 'rainy season' – persists in the face of displacement, despite its seeming irrelevance in the era of intensive irrigated agribusiness. Strikingly, when these refugees lost their land and villages, they took their 'weather' with them, as a pattern of engagement with, and knowledge of, the air. This serves them as a guide to rain-fed agriculture in a semi-arid environment and as a source of pride and cultural independence related to their identity as *fellah* (peasant) against the backdrop of a broader marginalization process.

In the West Bank, on the hills where *murba'nia* originated, this meteorological knowledge system is nowadays seldom spoken about and is generally excluded from modernization narratives. Yet it continues to be a vital component of the skills required for family farming, which – in the circular economy of the Bethlehem area's *habba'il* (terraced gardens) – still rests on the relatedness of resources.

Murba'nia consists of a complex classification of increasingly rainy/wet/cold periods, a 'rainsphere' to be skilfully navigated with a view to saving as much moisture as possible for the longer dry and hot summer. By engaging with the historical unpredictability and variability of rain, *murba'nia* offered, and offers, a means of framing uncertainty, and of

attaining familiarity and intimacy, not with equilibrium or fixed seasons, but with erratic, unpredictable and uncertain patterns of fluctuating rainfall. This in turn helped to organize strategically the work of rain-fed farming, which demands skilful management of water and moisture.²

Of course, the historical legacy of this weather knowledge, a looking up to and engaging with the weather that informs ‘down to earth’ practices, is in strong contrast to the political and ecological context, where lands have come under occupation via fencing and bordering, and provide an ‘unstable’ foundation – a further departure from the relatedness of ancient weather practices under a shared sky. The ‘facts on the ground’ that have driven change in this small region have become disconnected from the ‘facts in the air’: a contemporary form of change that is not unique to these intensely contested lands and is at the heart of the contemporary attempt, in an overheating global atmosphere, to seek new frames and knowledge of weather relatedness (see Figure 10.1).

Refugees’ Rooting of Themselves in the Air, and Palestinian’s Loss of Ground

In 1995, when I was conducting ethnographic fieldwork among Palestinian refugees on the Jordanian east bank of the Jordan Valley,



Figure 10.1. Prickly pear in Battir (photograph taken by Mauro Van Aken)

the lack of water in this torrid depression was clearly a key issue for an agribusiness sector that had radically transformed environmental and social patterns in farming. While living in this low-lying and scorching region, I got used to waiting for the evening east wind to blow, so that I could cool down after the long hot summer days, and to hoping for the coming rainy season, on which water supplies and the next harvest depended. At that time, I recorded Abu Ziad Amin Kanaan Turkmani – a 1948 refugee from the Haifa region – giving his account of an agricultural weather calendar that he still used to orient his way through the clouds and rain of the winter months, conserving it in his social memory as one of those traditions that refugees essentialize in displacement. This calendar was known as *murba'nia* and consisted of a set of phases making up the much-anticipated but erratic rainy season, which corresponded to specific work practices and enabled farmers to recognize the different types of wind and rain, the pattern of intensifying cold and frost, and the activity of other nonhuman ecological sentinels as snakes, specific insects or wild-plant development. *Murba'nia* helped to determine the timing of the strategic tasks to be performed in preparation for the wished-for greenness of spring. At that time, I categorized this ancient memory as part of the refugees' nostalgia for their past, denying what has recently become more self-evident: that knowledge of the environment has always been a component of local savoir faire. This, in turn, is closely bound up with knowledge, in contrast to certainties, about the weather and its unpredictability, and with the embodied experience of its historical patterns. Although my research concerned water as a key medium (Van Aken 2003, 2012), I then generally understood weather conditions as remaining outside of, or above, the environment. In addition, *murba'nia* had become 'out of place', given that regional modernization schemes had caused farming to be redefined as unlimited intensive irrigation,³ and water issues had been hidden away in distant water-control stations designed to capture every available drop for commercial agriculture and urban development. However, Abu Ziad, like many of his peers, recalled *murba'nia* not only out of nostalgia for his lost land (and air), but also to describe and explain his family's work as sharecroppers on fields that were still rain-fed or at least less systematically irrigated.

The displaced Palestinian refugees of 1948, and later those of 1967, not only brought with them what material things they could, along with their material-cultural and agropastoral knowledge, but also travelled with the 'air' of their homelands: a highly volatile, flowing, immaterial knowledge that nonetheless represented a key component of their social belonging and way of dwelling, a 'solidarity' with a weathered place

(Hulme 2017: 16) that persisted even in a strikingly different ecological and economic context.

Murba'nia wisdom about the weather and its historical variability informed agricultural practice and, indeed, represented a key component of knowledge about farming in arid areas. It supplied a template for reducing the risks associated with potentially extreme weather events and erratic rains, which formed the cornerstone of ancient semi-arid rain-fed agriculture and food making.

While 'down to earth' is a terrestrial metaphor that aptly depicts the material conditions of farmers, it deflects attention from the patterns whereby cultures weather (Hulme 2017) and their everyday landed practices. These comprise collective and active atmospheric engagements of looking up into the air, a multisensory experience that guides them in ploughing, sowing and mitigating risk or, in particular, water stress. Hence, like any weather-knowledge system, *murba'nia* is more appropriately understood as a 'down-to-air' form of knowledge and practice, in which on-the-ground dynamics are closely interrelated with dwelling in an atmosphere, via an empirical set of action and relations (Strauss and Orlove, 2003; Vannini et al. 2012).

Climate change is driving the revisiting of the disconnection between human activities and nonhuman agents, and especially between an environment viewed as solely terrestrial and the weather in which it is enmeshed. Cultures are 'weathered' (Hulme 2017), in that they have always inhabited dynamically shifting weathers, so that having to deal with an overheating global atmosphere brings the relationship between weather and society back into focus, this time within a crisis framework. *Murba'nia* is a legacy of seasonal and generational relatedness, which today is again proving to be crucially important – even while this is strongly denied in contemporary cultural models.

In recent years, while conducting research on family farming in the Bethlehem area (the West Bank), I once again came across the memory of *murba'nia* among the older generations of *fellahin* (peasants), although for many it has now fallen into oblivion. Current versions of *murba'nia* vary somewhat in terms of their classification of the phases of the calendar, yet in one form or another, the *murba'nia* is still present in rain-fed family gardens and practices. This is even more the case in mountain areas, where *murba'nia* is remembered and valued for its emphasis on the variable and limited availability of water, an issue that in the high-tech, colonized setting of the last half-century has only had the effect of exacerbating distress and anguish.

Both the fragility and the potential inherent in this ancient relatedness to water and weather rest on the key historical distinction between a long

hot and rainless summer (*sef*) interrupted by a hoped-for, unpredictable and changeable winter rainy season, known as *shitta* (not by chance, the same word used to indicate 'rain'). From a local, peasant perspective, the year is inevitably and sharply divided into a variable and internally complex rainy season and a lengthy rainless phase.

While the study of Palestinian peasant history has been important in relation to the struggle for autonomy and the defence of the land, attention has rarely been paid to local knowledge and on-the-ground farming practices, which have been overshadowed by theories of modernization, the transformation of the backward peasant into a 'modern' farmer (Van Aken 2012), and the expropriation of land and water within the ongoing colonial integration of the West Bank into Israel. One exception is the historic investigation into weather knowledge conducted a century ago by the anthropologist Dalman (1928), whose exploration of *Work and Customs in Palestine* primarily focused on local systems for understanding rain in light of strongly variable fluctuations in precipitation: 'The end of the year is the end of the summer' (1928: 24). His account of local material 'traditions' examined local relatedness to the weather in terms of proverbs and farming practices, which were presented as tools for dealing with the unpredictability of weather and for interpreting patterns of rain, wind, frost and dew.

Facts on the Ground, Facts in the Air

Today, the occupied West Bank represents a tragic laboratory for land expropriation, deterritorialization, fencing and the bordering of contiguous communities. In short, there is a set of harsh, contested 'facts on the ground' that are amplified by nationalist ideologies of land and nature arising in the context of Israeli nation-building and the military control of land and resources in the West Bank. Conditions that are peculiar to this setting, yet reflect experimental techniques for framing disconnections of contiguous territory that are increasingly spreading around the world. In this scenario, land has become the unstable basis for a daily sense of crisis, so that environmental issues and climate change are just two distant problems among more tangible, urgent and immediate emergencies arising within the colonial encounter.

Murba'nia poses a strong challenge to our own contemporary models of understanding the air and weather, and to our disconnection from the environment. As Hulme (2017) has shown, the ambivalence of weather as the most sensitive yet invisible environment and the culturally engagement with/in it have led to a lack of conceptual frameworks for weather relatedness. Yet, cultures are weathered and *murba'nia* is a good example

of this kind of local legacy. First, it is a weather knowledge derived from interaction, embodied experience and engagement with the winter as a 'rainsphere', and thus based on highly concrete and on-the-ground experience. Second, its shared patterns of knowledge provide a basis for making sense of, predicting and conducting rituals around weather conditions. They offer a means of constructing a 'down-to-air' sense of stability and solidarity, in contrast to the emotional anguish of the inability to make sense of extreme and unfamiliar weather conditions that characterizes our time.

Furthermore, in local cultures, weather is domesticated as opposed to dominated. Knowledge of experienced and anticipated seasonality translates into an active relationship with a 'weather world' (Ingold 2010), which in Palestine has meant interacting with fluctuating levels of humidity in an essentially arid setting: an attempt to navigate volatile weather conditions via recognition of the winds, patterns of humidity, types of cloud, seasons and the action of multiple living agents. *Murba'nia* thus represents one of the 'diverse cultural interpretations of humans' sensory experience of the atmosphere's restless weather' (Hulme 2017: xiii) and an instance historically related to the affordances of rainfall. What today is an icon of the ephemeral and of volatile uncertainty has always been part of a cultural attempt, via symbolic and material interaction, to create models of everyday living and farming, as well as a pattern of 'dwelling' in the atmosphere (Ingold 2007: 531).

Rediscovering this weather relatedness, even in a modernized and colonized context that suffers daily crises due to political disorder, helps us to understand our relations with weather change: above all, the dynamics of denying environmental relatedness, and the lack of shared cultural models for facing uncertainty, the 'unthinkable' as Ghosh terms it (2016). For when we are disconnected from our environment, climate change becomes radically and emotionally unsettling, undermining our sense of familiarity and trust, and amplifying the uncanny effects (Weintrobe 2013) of being unable to make sense of atmospheric relations. At core this comprises a weather weirding, an unsettling of previously familiar relations to weather change.

The *murba'nia* calendar traditionally represented a strategic and cultural pattern of recalling the past to anticipate the future, in a way that provided defined timeframes and ritualized annual cycles with moral, political and economic implications linked to a sense of belonging. Cultures are rooted in the air, and peasants have experienced this uncertainty by fully engaging with the limits and affordances of local seasonality.

As elsewhere, in the West Bank of today, the air has become a locus of risk (Sloterdijk 2016): it is the space of colonial visual control, helicopter discipline and attacks, and drone surveillance. Indeed, Israeli colonial architecture has created two separate 'vertical landscapes' (Weizman 2002), whereby the surface of the land is juridically divided from its underground dimension (water and archaeological resources) and, crucially, from the air above (air control, radio and networks) – a technical but schizophrenic fragmentation of sense of place, effected by means of multiple technologies and shifting military borders. In this context, it is interesting to note the recent use of weather metaphors by the Israeli Defence Forces to describe their military operations, in an overturning of atmospheric meanings: Operation Rainbow (2004), Operation Summer Rains (November 2006), Operation Autumn Clouds (November 2006), Operation Hot Winter (March 2008) and Operation Sea Breeze (May 2010). Here, the traditional shared cultural investment in rain makes a comeback, but as a human affair, while the 'hot winter' metaphor is well suited to the dynamics of overheating that we are currently experiencing at the global level.

Despite this new human disciplining, *murba'nia* reminds us that weather cannot be bordered and that local 'weathered' knowledge remains a resource for all, because of the relatedness that it reproduces. However, while current changes in the weather bring to light 'the troubling boundaries of the material and the immaterial' (Ingold 2007: 525), this aspect is obscured by the instability affecting territory: ideologies of land and the fencing of territories overshadow the patterns of relationships that shaped the Palestinian hills.

Weather changes challenge our understanding of the cultural relations between the terrestrial environment and the atmosphere; therefore, an exploration of key meanings of land can lead us forward in our analysis.

Land Imagination and Farming Ideologies

While disconnection from weather worlds is currently a global issue, in the context of the West Bank, it is related to the new realities of the material and borders that are here clearly under experimentation. In the last few decades, the West Bank has been a tragic laboratory of walled futures – a space in which we may observe novel techniques of territorial colonization and segregation, contiguous separateness, and confined categorizations of humanity. Indeed, scholars have analysed the accelerating and modern quality of land discipline in the high-tech colonial encounter (Temper 2009; Weizman 2002), bringing to light two

key aspects: first, a 'troubling' materialism and attachment to the land, which is viewed as disconnected from the atmosphere; and, second, a nationalistic politics of nature.

Indeed, the materiality of land is 'difficult to imagine' from an exogenous perspective or from within the colonial experiences elsewhere in the last century: arbitrariness and disconnection characterize the perceptions of territory, with Israeli colony cities forming the borders of Palestinian neighbourhoods, and the colonists' networks and logistics constituting fences around Palestinian territories and movement. It is an integration through exclusion, in which 'one man's imagined community is another man's political prison' (Appadurai 1990: 32).

The West Bank has been integrated into Israel through a process of segregation that rules out any future sense of territorial contiguity, let alone autonomy. Since 1967, the militarily controlled Area C has contained most of the farming land and water resources, and is inhabited by 300,000 Palestinians, who are fenced in and surrounded by settlements housing 325,000 Israeli colonists. In this territory, farmland owned by Palestinians is continuously at risk of being denied access to underground water resources, or of arbitrary expropriation when this appears linked to ensuring the security or expansion of a nearby colony. Indeed, Palestinian communities may be better visualized as disconnected islands in a sea of military control and separated neighbouring colonies. In this material framework, it is normal for a field of olive trees to be secretly ploughed by mules at night because a farmer is not allowed to work land that has been reclassified as a 'security area'. Similarly, it is common to see rows of small olive trees planted in aubergine fields. This crop combination that has nothing to do with historical relationships among local plants, but rather is a form of 'defensive agriculture': in the case of military expropriation, only the presence of olive trees provides tentative legal grounds for appealing the decision to a military court (Braverman 2009: 130). For generations, and even more so over the last two decades, land has come to represent the material risk of losing the 'ground from under one's feet'; rather than solid stability, land now constitutes a surface of arbitrariness and a lack of control over the material.

As Ingold has observed, 'the equation of materiality with the solid substance of the earth has its roots in a tendency, deeply sedimented in the canons of western thought, to imagine that the world is presented to human life as a surface to be occupied' (2010: 103), a surface that here is also 'occupied' militarily and is disconnected from a shared atmosphere overhead.

In this context, modernization narratives are coupled with biblical narratives of land and with the invention of a desert to be redeemed using techno-fix solutions (Mitchell 2000; Worster 1985), and this is in keeping with the contemporary myth, which is widespread throughout the Middle East, of 'letting the desert bloom'. The notion of controlling resources so as to restore 'biblical nature' as an authentic reality is at the core of symbolic values and nationalist ideologies. The physical land is overlaid with religious ideologies of land that have been reproduced in the secular nationalist planning of the territory. The politics of nature is a further, and related, factor that has contributed to the reshaping of the idea of environment within Israeli national narratives. Specifically, the Promethean ideologies that see humanity as controlling nature have informed new national meanings of farming and planting, leading trees to be assigned a special role within Zionism (Braverman 2009). Agricultural ideologies of redeeming supposedly abandoned territory have served to root the 'new Jewish man', and a new national and religious community, in the returned-to 'Promised Land' after the Holocaust. Politics are planted along with pine forests (Cohen 1993), and attachment to the land has been naturalized through farming. Such symbolic meanings of agriculture are present in many cultures, but are here condensed in an extremely small region. In this context, however, rooting one community through farming and forests has meant derooting Palestinian communities and olive trees, while also obscuring the political nature of the process. Indeed, the national policy of pine-forest development was intended, since the creation of Israel, and even more so since the 1967 incorporation of the West Bank, to cancel out the lost Palestinian landscapes and villages, hiding a community and its territorial signs with the aid of the fast-growing pine. Within the nationalist Zionist narrative, protecting and managing 'nature' confers totemic value on the pine tree: a flag planted to mark the conquest of land, which simultaneously serves to erase contested Palestinian lands. In short, national construction has been based on an arboreal imagination of roots coincident with a denial of the Other.

On this battlefield of planting ideologies, the Palestinian peasant has become both an icon of national resilience in the face of occupation and an anchor to the land of a reified Palestinian cultural authenticity. The idealization of the local *fellahin* has been paralleled by a historical process of depeasantization and the proletarianization of cheap labour in Israel, the collapse of local agropastoral systems, and the ongoing loss of land and water autonomy, though this has not eliminated residual

farming and the reproduction of patterns of kinship solidarity in the midst of wider social mistrust.

Indeed, the *fellah* has acted as a 'national signifier' 'that unites and mobilizes by virtue of the fact that it dissimulates past and present differences within the national movement, in the interests of a leadership with particular class interests' (Swedenburg 1990: 25). While on the one hand, the *fellah* continues to function as the soul and root of national identity, on the other hand, small traditional farmers have received little developmental aid and limited assistance from the Palestinian National Authority, both of which prioritize urban planning and intensive farming. Notwithstanding the reification of the *fellahin* (to the detriment of the Bedouin pastoral tradition), not much is known about the historical changes in, and current reality of, their local knowledge and relationship with the environment, a 'construction of ignorance' underpinned by colonization of the land, but also amplified by Palestinian modernization policies that have overlooked local rural systems and knowledge. It is understandable that the *murba'nia* has been largely forgotten, along with other knowledge about the circularity of resources that forms part of the legacy of local *fellahin* systems and that today only survives within extended families ('*ailat*'). The outcome is, as the local expression goes, 'agriculture without peasants', and contradictory processes such as aid modernization of agriculture in the absence of territorial autonomy, the development of market agriculture despite market dependency on Israeli food imports and so on.

Murba'nia was a local meteorological knowledge shared by both coastal and mountainous agricultural areas, with the latter forming the main source of seasonal rainfall for the West Bank. However, the Palestinians lost access to the sea, along with their sea-merchant culture, and today are fenced into high-lying areas of the West Bank. As argued by Tamari in a book significantly entitled *Mountain against the Sea*, being cut off from the sea has amplified the historical 'emergence of the cultural divide between mercantile and cosmopolitan coastal communities and mountain-dwelling smallholder peasants' (2009: 1), enclosing Palestinians and the failed possibility of an autonomous state in this mountain region that has historically been home to an autonomous peasantry that formed the basis for agricultural production.

From a territorial perspective, the mountains have lost the sea, yet in the terms of the *murba'nia*, weather still unites these bordered and divided-off areas: the land has been fragmented, fenced and oversignified, but this all takes place underneath a shared weather system. *Murba'nia* offered meanings of ecological relatedness that have been absorbed into social communication at the local level, beginning with

rain and water: 'Christians, Muslims and Jews display similar attachments to popular saints ... as we witness, for example, in rain processions in periods of drought' (Tamari 2009: 105).

***Murba'nia*: Weathering Land and Meanings**

As stated earlier, *murba'nia* stands for a complex schedule of winter rains, broadly classified as a ninety-day season that is closely bound up with the need for water in an arid environment and agropastoral economy. This weather-knowledge system places special emphasis on the beginning of winter as the beginning of the new year, as a signal that the dry, rainless weather of the hot summer is about to be interrupted, thereby prompting the *fellahin* to time and define their work practices strategically, in line with highly variable winter weather that demands flexible management.

Their calendar for working the land has been organized around the rains, delimiting time and space as a rainsphere, which requires the flexible deployment of farming skills to save as much water as possible for the longer, dry, hot summer season, or to protect the land from excesses of rain that might cause the erosion or destruction of terraced slopes. The scheduling of farm work was not previously determined by market prices, the current political and economic confinement or aid funding to grow unsustainable market-oriented flowers, but by a more ancient cosmology that was intimately familiar with the unpredictability of the weather and the associated 'fluxes' of water. This involved recognition of the different types of rains and their 'proper timing' (Dalman 1928: 117) in terms of quality and quantity, in combination with patterns of frost, snow, dew, moisture, and the activity of multiple nonhuman agents on the ground, such as types of wind, insects and wild plants.

The *shitta* (the term for both winter and rain) lasted ninety days, beginning on 21 December. The most strategic tasks were carried out over the first forty days: land and seed were prepared and work-cooperation patterns activated in advance of the rains, the *murba'nia*. Over the following fifty days – from 1 February to 21 March – the rain and cold would gradually intensify, and this second period was divided into ideal phases lasting 'twelve-and-a-half days' each. The first time that I recorded an oral account of this calendar, I was struck by this apparently excessive quantification of phases into half days, but realized that rather than a rigid prediction, it was intended to encourage flexible management of what is actually a potentially disorienting variability in rainfall, in terms of timing and location – as aptly expressed in a proverb recorded by Dalman: 'One hour rain, one hour sun' (1928: 122).

The entire calendar year is divided into seven fifty-day periods, termed *khamsinat*, which 'are based not on star constellation but on the feasts of Christian calendar' (Dalman 1928: 51). Among these, the crucial fifty days of rain and cold are subdivided into four phases, known as *sa'd*, 'literally the four fortunes' (Qleibo 2009: 13). This weather model was informed by animist beliefs about Baal, the ancient god of fertility and rain, with weather rhythms incorporated into religious feasts as social markers of both atmospheric events and common farming knowledge. The rain variability is not only borne out by rainfall statistics, but is also strongly reflected in Palestinian proverbs such as '*Murba'ania* is a burning sun or a submerging rain!' (Kurzom 2012: 12).

The first phase of *murba'ania*, named *sa'd al dhabih* (Capricorn), lasted from 1–12.5' February and was characterized by an initial spell of intensifying cold, sometimes preceded by the east wind as an 'arouser of rain'. This was followed by *sa'd al sau'd* (Aquarius), running from 12.5'–25 February and marked by the *khamsin* wind blowing from the western Badia (arid land), a cold but dry air current that contained less humidity than the east wind sweeping in from the sea. Indeed, February was often referred to as 'the harbinger of summer', as the increasing cold also preceded the end of the rainy winter and the initial growth of the newly sown crops in the fields.

Next came *sa'd al bala* (25 February–8.5' March), a period that was strategically interrelated with *Mustaqrida'att* (25 February–4 March) when the land 'warmed up' and 'drank' or absorbed the rainwater. A final cold wind characterized this shift towards increasing warmth, notwithstanding the possibility of heavy rain and mud in the fields. Given that the last rains before the long rainless summer were often critically important, if water was scarce during the shortest month of February, it was hoped that some might be 'lent' to March, thereby 'prolonging the [winter's] age' (Kurzom 2012: 12). Last, but not least, there was the period of *sa'd al khabaieh* (8.5'–21 March), 'when snakes and scorpions (*khabaieh*) come out after their winter sleep', characterized by further warming up of the land, the onset of milder temperatures and key end-of-winter farming activities.⁴ The entire climate calendar, in apparent contradiction with the provision of a precise time schedule, has many different variations, which are probably related to the model's contextual dependence (with sensitivity to factors such as a given mountain valley's distance from the sea or nearness to the Jordan Valley depression), in contrast with the context-free models of contemporary modernized farming.

The end of this liminal rainy period of 'suitable' versus risky rain is often depicted as a radical shift from aridity to luxuriant blossoming 'greenery'. *Khudra*, which bears the multiple meanings of the colour

'green' – 'vegetables', 'green' plant growth and more generally the 'greenness' of the landscape – is also the name for the start of the summer. 'The fertilizer of the year is March. March is its fertilizer, but also its barrenness' (Dalman 1928: 308) – an ambivalence played out yearly around rain variability and farmers' skills in working with it. This is the period when 'the land warms up', as an old farmer in Battir used to tell me, a process that demands the preparation of the soil to retain moisture, collection of rainwater, adoption of measures of protection against any late frosts, and flexibly in coping with fluctuating weather patterns. In sum, in this model, weather is not conceptualized as an indoor phenomenon under human control (as in greenhouse cultivation), but as related, with generations of adaptations, to the unruly outdoor fluxes of the atmosphere. The 'local saying ... "move hard with your land work, peasant, for there is no more time to count before the winter sets in", reminds the peasant that the countdown for winter is over' (Qleibo 2009: 13).

The names of the phases refer not only to a weather world, but also to a cosmology, which was later assimilated into Islam, as well as the other two monotheistic religions that developed from this land and its weather. This pattern of syncretism has been absorbed into religious rituals, such as the Palestinian rites of spring and the Thursday of the Dead (Qleibo 2009: 18). In short, this 'weather world' (Ingold 2010) established, in both moral and pragmatic terms, the collective and individual work that needed to be done, as well as a complex set of shared meanings that have made the seasonal greenness of these hills a much-admired sight.

This traditional Palestinian weather calendar can be of use to us today in reading the relationship between cultures and weather environments, in light of key themes such as global warming, water scarcity and social resilience to climate change. First, it represents a historic social pattern of coping with extreme changes and unpredictability in weather. In these regions, 'emergency' periods have featured in farming knowledge and practice since antiquity. Second, it offers knowledge of the weather based on the interplay of uncertainties, and on engagements in practical multi-sensory recognition.

These lands have been obliged to relate to the variability of the winter rain and to cope with uncertainty across generations as a means of making place and food. Their weather calendar, far from providing certainty and a basis upon which to predict the weather reliably, above all highlights the flexibly required in navigating one's way through the rains, given that 'rain is unpredictable in its occurrence or absence' (Dalman 1928: 313). In short, it offered an approach to monitoring, and responding to, the erratic 'coming and going' (Dalman 1928: 117) of atmospheric flux

that took into account the risk of premature rain, of frost and snow, and the strategic use of dew or shade in building farming spaces.

One of the main actors in weather is undoubtedly the wind, but it is increasingly forgotten, not only in irrigated agriculture and in our 'indoor' models, but also in 'indoor' greenhouse cultivation that allows crops to be grown out of season to meet the demands of a (closed) open market.⁵ Yet, as Ingold writes, 'to feel the wind, then, is to experience this commingling' as 'fluxes of the medium' (2007: 529), whereby our relationship with the weather is not based on 'mutually exclusive hemispheres of sky and earth, separated by the ground' (Ingold 2007: 519). *Murba'nia* indeed defined weather as a medium for the social world on the ground, in which farmers could work to the best of their ability: it was a means of being 'perturbed' in the positive and active sense of this term, a collective and generational experience that took place not only on land but also through the atmospheric medium.

Working 'Down to Air'

While 'down to earth' is a good metaphor for how we care practically for the landed environment in which we are entangled, it reproduces an implicit disconnection from the weather world above us as a medium for human action. 'Down to air' is a closer metaphorical representation of what we experience daily and of what the *murba'nia* has represented for centuries: the rooting of knowledge and experience in the air above, and its relatedness with dwelling and farming on the ground. Today, denial of such entanglement is leading to global anguish, because it is accompanied by a void of meaning, and the loss of a guide to practice, a lack of 'familiarity' that stands between our living and our consuming on the earth. We are confronted by troubling issues with our materialism, which is seen as disconnected from both nonhuman agents and the upper environment. The landmass and the cultures rooted on it are viewed as bases for certainty, stability and a sense of permanence, yet *murba'nia*, as in other cases of local meteorological knowledge, shows that uncertain and flexible stability is rooted in strategically following the rhythms and phases of the 'local' weather.

Murba'nia speaks about relations: symbolic meanings, farming practices and relatedness with water. It prescribed three main down-to-earth practices for rooting plants with adequate humidity: harvesting water, understood as 'harvesting weather'; reproducing and planting rain-fed *baa'li* seed via 'exposure' to rain; and ploughing the land accordingly. Although today there appears to be no place for *murba'nia* in a context

of intensively irrigated agriculture and politically disconnected lands, it remains an active part of local *savoir faire* in family gardens.

Cultivating Relatedness

The *habbai'l* in Battir are terraced tracts of land that receive irrigation thanks to the survival of one main source of spring water. Today, they are used to produce family food supplies against a backdrop of decreasing resources, land confiscation and market closure that mean that cultivating one's 'own food' is often perceived as a crucial symbol of 'freedom'.

Local environmental knowledge and expertise, which have generally been substituted by a mix of colonial and aid-driven modernization patterns within an overall devaluing of agriculture, remain entrenched in these domestic, terraced and irrigated gardens, where a strong emphasis on the relatedness of resources is retained. The main components of this surviving local *savoir faire* are an awareness of the limits and flexibility of resources; a circular exchange of ecological resources in which 'nothing is wasted' (Van Aken 2016); the local reproduction of ancient rain-fed seeds (*ba'ali*), which have otherwise been substituted by intensively irrigated crops produced for the market; and the renewal of soil fertility as the basis for sustainable home production.

These gardens are spaces of intensive production, with a diversity of vegetables (summer and winter crops) and fruit trees, domesticated herbs and key wild herbs (crucial to the local diet and for medicinal use). Families weed by hand, which allows them to separate valued wild herbs from fodder for a few residual sheep and goats, whose manure is still prized as the best fertilizer.

'Cultivating chaos' would be an appropriate way to define this cultural investment, due to the unpredictability of the shifting colonial setting, in which a tract of land may be expropriated at any time under Israeli military law. But there is a positive quality to the apparent irrational confusion of these promiscuous and seemingly disorderly vertical gardens: grass is left in the fields in order to retain humidity during specific periods or to protect young plants from the sun; or selected crops are left unharvested in the gardens to mature for seed production. The key emphasis in these marginal gardens is on doing the work by 'our [the farmers'] own hands', so as to reproduce skills that are meaningful not only in relation to the gardeners' past but also to their future: making resources available for the years to come, or passing on knowledge to the future generations by teaching mule-drawn ploughing techniques to young children at weekends. Such skills, as embodied practices enacted in the environment, are not often verbally articulated. Yet, for these Palestinians, 'knowing how

to do' is connected, in their highly disciplined context, with being *horr* (free), as is 'knowing how to move around' (for example, when going out at night to search for *zattar*, a well-known wild herb, now designated as 'protected' by military order). Furthermore, gardening remains key to local economic coping strategies.

These gardens are a 'family affair'. Inhabited places of hospitality, they replicate cooperative arrangements on a smaller scale. Seeds are planted to cater for the family's culinary preferences and to produce ritual dishes in advance of Ramadan exchanges. The sharing of crops reinforces family ties in the *aila* (extended family) or of the otherwise fragmented *hamula* (tribe). Only in the event of a surplus will a small amount of cash income be earned at the Bethlehem market. These intensive spaces of production are characterized by investment in diversity and relatedness, by means of crop rotation, fallow cultivation, the management of crop combinations and relations (those that are positive and those to be avoided), and the strategic use of shade or the special preparation of the soil to capture the summer dew.

Atmospheric Seeds: Ba'ali and Wished-for Fertility

Ba'ali, or rain-fed seed, has been reproduced in these specific weathered conditions by generations of farming people. The land where this seed was planted was defined as *ard ba'al* ('exposed to rain' – Dalman 1928: 194), with the concept of exposure clearly expressing the system's rootedness in weather. However, *ba'ali* in recent decades has been perceived as unsuited to the market and has acquired, in the contemporary colonial setting, the meaning of local, or *baladii* ('of the village'), and, via metonymic transfer, has also become an icon of the 'organic' and naturalness. *Ba'ali* seed is context- and practice-dependent: it was born and has been reproduced within the *murba'nia* system of relatedness. As was well expressed by one nurseryman, '*baladii seed* is a daughter of the place'. Born of the affordances and related work practices of the air, rain, clouds and winds of the winter,⁶ *ba'ali* is weather-dependent and weather-sensitive, needing to 'drink less' than other varieties, adapted to the caprices of the winter rains and well suited to ad hoc techniques of deeper planting so as to leave a greater portion of the stem in contact with the ground moisture.⁷

Interestingly, the name of this seed derives from the previously mentioned rain and fertility divinity of antiquity, Baal, a deity of fundamental significance in the Canaanite religion of the Ancient Near East (Botica 2013: 97). This connection reflects the close set of relations among weather cycles, agriculture, fertility, and belief systems. Baal was 'the bringer of rain', whether weather conditions were stormy, rain was bountiful or the

land was drought-stricken. This meant that rain was a sacred blessing and drought a judgement. Today, *ba'ali* seed is not just a form of biodiversity that has survived in the home gardens; it has also been shaped in relation to the local weather world in a way that allows small farmers to retain their local and family food supply. This is synonymous with being 'free' (see Figure 10.2).

Harvesting Water, Harvesting Weather

'*Al muhimm al bire!* [the most important thing is the cistern!]' is a common-sense rule for any person farming in the West Bank: it refers to the need to store as much water as possible in a specially constructed cement cistern that represents a major cost for small landowners, but that is critical in the face of increasing diversion of water away so as to serve the Israeli colonies. Hence, the current political reality forces farmers to rely on the rainy season to harvest water even more than they had done in the past. *Murba'nia* has historically encompassed a set of practices and techniques for harvesting water (that is to say, for harvesting weather – wind, humidity, rain and storm) and storing it. These include maintaining, repairing or building terraced land (*senasil*) to avoid sliding and erosion in the case of heavy rain, and laying out the land so as to conduct rainwater to a common storage pool, where it is purified and kept for the work of



Figure 10.2. *Fellahin* hands showing a local *ba'ali* aubergine from Battir (photograph taken by Mauro Van Aken)

the long summer. In the past, a *bire* was a water basin dug into rock and covered to prevent evaporation (see Figure 10.3).

Techniques of water harvesting denote a historical intimacy with water drops based on local proverbs and the landscape, as observed almost one century ago by Dalman: 'Limited reserves in the cisterns and wells, a modest or bad harvest, an inadequate yield of grapes, figs and olives, are a certainty and one has to be careful to use water sparingly' (1928: 306). In the same period, El Ezari Vulcani, a Polish agronomist who was later to become the Israeli national icon of modern agronomy and the scientific founder of colonial farming, also praised the *fellah's* relationship with water: 'the secret of his improvement is the skilful storing of the water in the layers of the earth, and the economic use of it' (Vulcani 1930: 15). Vulcani was conducting an applied study on 'modern farming' when he came into contact with 'primitive' Palestinian dry farming in what subsequently became Israel and the Occupied Territories. Informed by an evolutionary understanding of the native population, he condemned the 'fellah's primitive farms', yet in this encounter, he could not help admiring their work patterns and *savoir faire*:

The whole farm of the Fellah forms an organic unity. Everything is produced in it by its own powers: he is not dependent on any external economic factors ... His world is not governed by the principle of time is money, but by the



Figure 10.3. An ancient *bire* in a side valley of Battir (photograph taken by Mauro Van Aken)

principle of 'preservation of matter'. He allows nothing to go to waste. Everything which appears to be lost returns to him after various transformations. (Vulcani 1930: 40)

Rather, this depiction of local skills was based on a recognition of the Other that in the contemporary era tends to be denied. Vulcani deemed that these aspects should be preserved in the new experimental modern farming systems. Today, climate change and agroecology are once again bringing the importance of such weathered skills to the fore, in that they express the relatedness of human action to weather and fragility in these lands.

Collecting water has traditionally constituted (and even more strongly so in the last few decades) against a backdrop of intensifying competition for water, a harvesting of rain and weather by preparing the land network to store as much water as possible for the future summer season. The *murba'nia* rain calendar made this very clear by specifying the required preparatory work practices and framing them as a moral obligation. Of course, local knowledge of weather has apparently become irrelevant in the new cosmology of intensive irrigated indoor cultivation, which relies on aid funding, having distanced itself from local weather worlds.

Ploughing is another technique that is exploited to harvest humidity and optimize its absorption and storage deep in the ground. Hence, the ploughing calendar is also informed by the timeframe of the *murba'nia* and was designed to take weather fluxes into account. The mule-drawn plough vis-à-vis the modern tractor is an icon of *fellah* primitivism, but notwithstanding this orientalist stereotype, it remains the superior technique for preparing the land in small and fragile terraced fields. Thus, it is still in great demand among small farmers, and even among the Israeli colonists who recognize it as the most appropriate method for limiting damage to the terrain. Ploughing stands, in the midst of dispossession and arbitrary land control, as an icon of autonomy, of knowing 'how to do things': ploughing at night to get around the Israeli army's prohibition of it, ploughing as solidarity among families and ploughing as a crucial source of seasonal income.

The arrival of the rainy season is linked to the strategic timing of ploughing and techniques for the optimization of humidity absorption for the dry season. For many vegetables, the first ploughing is termed *shkak*, 'opening up the land', and takes place before the first rain in November, and is followed by *itsara*, 'taking out the grass', in March. In between, we find *al-ithnaia*, 'allowing the land to drink' after the first rainfall, at the height of the *murba'nia*, and, if necessary, *fakkus*, for the plants that need most water. Interestingly, the second main ploughing

is carried out in a perpendicular direction to the first, facilitating greater absorption of moisture.

These agricultures, in their heterogeneity, far from being frozen or ideal, are contemporary testimonies to the patterns of co-production of culture and environment in which the symbolic meaning accorded to human relatedness to other agents plays a crucial part in local productivity. The capability of local systems and networks to adapt to change so as to take into account the complexity of a garden highlights the key contemporary need, in facing uncertain futures, for institutional flexibility and ways of relating to the environment that deny neither relatedness nor change.

Conclusion

As aptly commented by Ghosh, 'a broader imaginative and cultural failure ... lies at the heart of the climate crisis' (2016: 8): the failure implicit in denying environmental relatedness, born out of cultural models that have constructed a managed nature at human disposal, and that are now confronted by the distressingly unfamiliar and uncanny character of climate change, which is all the more unsettling for the new dynamics originating above us, in the air and atmosphere. Where we expected order and regular seasons, we realize that 'everything changes', hence the unthinkable character of the current environmental scenario. We are continuously obliged to de-animate what we cannot understand, or experience, within our relations with weather and environmental agents.

The historical legacy of *murba'nia*, which survives in oral tradition and the savoir faire of some local farmers, denotes an imaginative and cultural capability to dwell in an atmosphere viewed not as ordered equilibrium, but as a succession of unpredictable arid and wetter periods, in which the seasons are actually made up of change. Its pattern of shared meanings and work calendar illustrate how cultures can attribute meaning to erratic living forces and dwell in weathered environments: in particular, they imagine weather as familiar and domesticated, and as part of a system of limits and affordances that also contributes to defining belonging, even in displacement.

This local knowledge of a weathered world challenges our own ambivalent model whereby we manage the material as a stable fundament and view the dynamism of the immaterial and aerial as mere instability, invisibility, confusion or turbulence. Thus, Palestinian peasant memories and down-to-earth savoir faire in the fields invite us to adopt 'down-to-air' perspectives and practices of relatedness, all the more so in the midst of increasing land borders.

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Notes

1. Quoted in Dalman (1928: 202).
2. My fieldwork in Jordan spanned the years between 1998 and 2004, while I conducted my ethnographic work in Battir, in the Bethlehem (West Bank) area, during different seasons in 2014 and 2015.
3. The practice of irrigation was implemented on a larger scale by channelling water from the Yarmouk River on the Syrian border. However, this has led to the current water-stress scenario and the 'construction' of water scarcity (Van Aken 2003).
4. In some accounts, the *khamsin* wind arrives during this last phase, which leads into the first fifty days of summer.
5. Proverbs have been the main tool for reproducing the savoir faire concerning the different types of wind: "The south wind says: "How many strong walls have I destroyed?" The west wind says: "How many streams have I made flow?" The east wind says: "How many branches have I bent?" The north wind says: "How many youths have I made cry?"' (Dalman 1928: 527).
6. *Sefia* (summer crops) and *shittia* (winter crops) correspond to two main categories of seed that are neither cultivated out of season nor indoors, but in concert with the dynamic and seasonal weather patterns and outdoor weather. Thus, the latter need cold while the former crave heat.
7. These varieties are also associated with *mahshuf* (open) cultivation, as opposed to the irrigated indoor agriculture of greenhouses, which are actually covered off from potential rainfall.

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