DANCING TO A TUNE: THE DRONE AS POLITICAL AND HISTORICAL ASSEMBLAGE
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A newspaper headline demands our attention: 'Suspected US drone strikes kill at least 13 in Pakistan, Afghanistan' (Fox News, 2014). Perhaps at first glance, the headline appears unremarkable, just another tragic consequence of a mode of remote warfare that has now been waged for more than a decade. But what precisely is the term 'drone' supposed to indicate in this phrase? What is it about a drone strike that makes it different to, say, an 'F-16-strike', or the more familiar 'air-strike'? How might we identify the particular quality of the drone, and where might it be found? We might begin by looking to the drone's 'unmannedness' or by considering what is implied by its acephalia. Yet if 'drone' were simply a stand in for automated, or unmanned, it might be enough to counter that an Unmanned Aerial Vehicle is usually no more automated than a Boeing 747, or that for every MQ9 Reaper combat air patrol there are roughly 200 human beings attending to, guiding, and maintaining the vehicle, including those men and women who manipulate the aircraft's controls.[1] Indeed, the pilot sitting in a cockpit is never directly turning the rudder; remote, then, is a matter of degree.

The term 'drone' injects ambivalence into the qualities of remotely controlled objects that otherwise might be passed off as useful, utilitarian, or functional tools, as prosthetics of a hidden hand. The ambivalence is not to do with the strike itself, which can be verified in many ways. Instead, the ambivalence has to do with the feathering edges of categories such as authorship, intentionality, control, the agency of objects, territory, and labour. The ambivalence relates to the ways in which the drone is productive of knowledge and reason. But if we are to begin to understand what kind of knowledge and reason is produced by the drone, we must recognise the drone as a political and historical assemblage, rather than a discrete device.

Not so long ago, the drone was colloquially understood as the male bee in an apiary. In the context of the metaphors for human organisation thrown up in liberal political and economic discourse, the drone was recognised as a boring bee, complacent, and satisfied with his lot, namely, the sexual pursuit of a virgin queen and the certain death which followed. Far from being understood as an autonomous agent, the drone had more in common with the friar, happily humming his liturgies under the thumb of monastic rule. These were figures of ridicule for the advocates of vigorous enterprise and liberal governance. So how is it that the term 'drone' has migrated from such an attribution to a remotely piloted vehicle?

The 'drone' is also the resonant foundation of music, literally the pillar of musical voicing. In the western musical tradition, departing from strictly monophonic Christian chants, the development of early classical music is a trajectory of relations between the drone, and the possibilities and benefits of relative liberation from it. The resonant drone is the pillar around which independent voices might gather, departing in flight, but returning to its fold.

This essay will attempt to catch the drone as it is colloquially understood today – the unmanned aerial vehicle, or the remotely piloted aircraft – and ground it in the discursive formations from which it has emerged. The continuities that traverse the drone from political economic discourse, through the development of the western musical tradition, and the manner in which the term drone has been applied to remotely controlled vehicles from the middle of the previous century, reveal a 'system of dispersion' (Foucault, 2002: 41) that problematises these fields as spaces in which knowledge and reason are produced. I will suggest that the drone, far from being simply a technical object, is in fact a conceptual figure, a producer of knowledge and reason that has remained veiled by colloquial understanding.

The Origin of the Drone

In the more ambitious texts on drones an origin story is often used to explain how the term became attached to its colloquial vehicle, the unmanned aircraft. In a common version, the drone derives from an association with bees. This bifurcates into several possibilities, one in which 'drone' refers to the sound of the bee, the droning of its wings, and the other in which drone refers to a resemblance (either visual or conceptual) to the drone-bee, a male whose sole function is

to procreate with the queen. These possibilities are not mutually exclusive, the drone-bee would still give off a droning sound of course. There is much discussion of this account.

Susan Schuppli writes in her piece *Uneasy Listening* that 'The origin of the term "drone", as used to describe unmanned aerial vehicles (UAVs), refers not to the buzzing insect-like sound emitted by their whirring propellers while airborne, as is commonly assumed, but rather to their mimetic resemblance to the male honeybee, a stingless insect possessing dark tail striping' (2014: 1). Peter Singer partially agrees, writing that the term 'drone' came about because of the stripes painted on the tail of a remotely piloted target aircraft (2009: 49). Medea Benjamin is less certain, simply noting that, 'Some say the name "drone" comes from the constant buzzing noise that some of the machines make in flight. According to other military lore, the name derives from a use of robotic aircraft as training targets for World War II gun crews' (2012: 13).

During the 1930s the British military developed the means to remotely control a de Havilland DH-82 Tiger Moth biplane. After its adaptation as an unmanned aerial vehicle the *Tiger Moth* was re-incarnated as a *Queen Bee* (Howeth, 1963: 479). The Chief of Naval Operations, Admiral Stanley, USN, spent most of 1935 in the UK. He returned thoroughly convinced that the Royal Navy's experiments with unmanned aerial platforms were worthy of further development by the United States' fleet.[2] 'In his semi-annual report for the last 6 months of 1936, the Officer in Charge of the project initiated the term "drone" as descriptive of the radio-controlled aerial targets' (Howeth, 1963: 481).[3] The attachment of the term 'drone' to remote controlled aircraft because of an exclusively sonic, visual, or conceptual resemblance is something that may never be entirely proven. However, in my view it is not necessary – at this point – to hold a position on the matter. Instead, the question itself discloses the conceptual formation of the drone as an historical assemblage.

Drone

Grégoire Chamayou notes in the opening pages of his book *Théorie du Drone*, that drone is a 'profane term' (2013: 14) for the UAV, or RPA. The military tends to prefer technical acronyms such as UAV (Unmanned Aerial Vehicle), RPA (Remotely Piloted Aircraft), or UAS (Unmanned Aerial System).

In its most normative conception, drone is apprehended as a thing, the flying vehicle mobilized by the military or police in activities that involve surveillance and killing at a distance: 'A drone is an unmanned aircraft that is piloted remotely. They are typically used for surveillance, but some drones are equipped with missiles used in lethal airstrikes' (Shaw, 2011: 12). Yet other statements complicate matters: 'The fact is that Wheeler doesn't like drones just because they're drones. He probably knows, though, that plenty of folks are rather taken with them *because* they're robotic – what better to use to terrorize the terrorist than an all-seeing eye with a Hellfire?' (Halsik, 2013).

As mobilised by Halsik, the term 'drone' already surpasses its colloquial designation as UAV or RPA. The drone is subject to the distinction of *taste*: one may like 'robotic' drones, or dislike them 'because they're drones'. 'Drone' might be substituted by any number of attributes normatively applied to humans such as 'blondes', 'athletes' or 'geniuses'. Halsik's text argues for the feasibility of the drone as a surveillance and weapons platform. In doing so he harnesses data through the tools of rational cost-benefit analysis. How many drones make up a combat air patrol versus F-16s? What are the costs associated with each platform, the maintenance, the amortisation over time? Which platform is more economical over 5 or 25 years? His opponent, Wheeler, is accused of possessing a conservative prejudice against the drone that compromises his ability to clearly and dispassionately think through the problem. Halsik asserts that Wheeler possesses a disregard for the drone – simply because it is a drone – in the same way that one might discriminate against a person's ethnicity or religious background. Halsik's claim is that, for Wheeler, it is not what the drone *does* that matters, but what it *is*.

Halsik's use of the term 'drone' shifts in subtle ways between modes of address. Here, the drone begins to take on an ambivalence that something more stable, such as an airplane, might struggle to possess. What is intriguing about the drone is the manner in which this slippage can defamiliarise the colloquial meaning of *drone*, as remotely controlled vehicle, while at the same time remain lexically appropriate, and keep making sense.

The poet Christian Bök (2007) writes: 'Is it not already evident that the poets of tomorrow are likely to resemble programmers, exalted, not because they can write great poems, but because they can build a

small drone out of words to write great poems for us?' What Bök refers to as a drone is a computer writing program called RACTER, revealed in 1983 with the publication of *The Policeman's Beard Is Half Constructed*: the first work, it is claimed, to have been written entirely by a machine. Perhaps part of RACTER's allure is the ambivalence produced by the concatenations of automated and human authorship in a project where an automated writing machine is composed of a set of algorithms, authored by two human beings, William Chamberlain and Thomas Etter. The computer program as writer, itself written by two programmers, is already a complex setup around the problem of origin, writing, authorship, production, and intentionality. In his essay on the subject Bök writes that 'RACTER is a mindless identity, whose very acephalia demonstrates the fundamental irrelevance of the writing subject in the manufacture of the written product' (2001: 10). Bök's figuring of drone has as much to do with distributed processes of authoring, as it does with algorithmic automation. While the writing subject is claimed to be irrelevant, it is nonetheless still present in many ways, including that subject's anticipated absence.

In another example, in his 2012 review of Tiqqun's *Preliminary Materials for a Theory of the Young-Girl* for the Los Angeles Review of Books, Adam Morris writes of the Young-Girl that, '[a]s one of Empire's citizen-drones, she is at once the complement and foil of the "terrorist", insofar as that word is understood to mean someone who opposes the violence of capitalism with more violence'. And furthermore 'to resist becoming another drone-like Young-Girl, one must become incompatible with Empire' (2012).[4] Here, drone refers to the becoming compatible of the Young-Girl with the project of globalized capitalist accumulation. In Morris's use of the term 'drone' there is an added dimension in which he identifies the Young-Girl with transparency. Essentially the transparency or opacity of the subject refers to their *readability*. '[W]hile troublemakers like the "potential criminal" and the "terrorist" are rendered transparent by the data-gathering of the biopolitical police force and disciplined accordingly, the Young-Girl renders herself transparent to the shimmering gaze' (Morris, 2012). The Young-Girl / drone is not a passive servant of empire. Rather, she renders herself, produces herself, as a compatible model citizen-consumer, writing herself into transparency, and thus perfectly in tune with empire.

How is it that these seemingly diverse statements around the drone are possible? Put another way, is it possible to map out a series of

points around which the drone might be formulated not as a discrete object but as a historical and political assemblage, a constellation that can account for the ways in which statements around the drone are produced in the present? The interrogation will proceed by exploring these bifurcations – drone as sonority, drone as drone-bee – one at a time. I will begin with a brief survey of the drone-bee and its historical and political figuration.

A Commonwealth of Bees

> [W]ho would hesitate to purify the hive with smoking heads of thyme and lop off useless cells, for oftentimes an eft, unnoticed, has been gnawing at the comb, or the nest's a mess of cockroaches that shun the light, and there's a drone – that good-for-nothing – squatting down to scoff another's feed. (Virgil, *Georgics*, 2004: 243-245)

The bee colony has served as a vivid metaphor for human societies since at least the time of Virgil, 37-29 BCE. The hive has captured the imagination of writers searching for ways in which a *natural* formation might be brought forward as evidence of the correct steering or governing of human collectivities, and in particular the moral relations of work, industry, division of labour, and distribution of wealth, to a notion of human society considered – like the hive – as a discrete whole, a discernible unity. The role of the drone in this metaphorical illustration is, for the most part, pejorative; an inutile member of the hive who is wholly supported by the labour of the collectivity and lives at its discretion.

The following passage from Shakespeare's *Henry V*, written around 1599, illustrates the imagined relation of the bee colony to human organization, and the drone-bee's role in this commonwealth of the hive.

> Therefore doth heaven divide
> The state of man in divers functions,
> Setting endeavour in continual motion;
> To which is fixed, as an aim or butt,
> Obedience: for so work the honey-bees,
> Creatures that by a rule in nature teach
> The act of order to a peopled kingdom.

> They have a king and officers of sorts;
> Where some, like magistrates, correct at home,
> Others, like merchants, venture trade abroad,
> Others, like soldiers, armed in their stings,
> Make boot upon the summer's velvet buds,
> Which pillage they with merry march bring home
> To the tent-royal of their emperor;
> Who, busied in his majesty, surveys
> The singing masons building roofs of gold,
> The civil citizens kneading up the honey,
> The poor mechanic porters crowding in
> Their heavy burdens at his narrow gate,
> The sad-eyed justice, with his surly hum,
> Delivering o'er to executors pale
> The lazy yawning drone.
>
> (William Shakespeare, *Henry V*; emphasis mine)

The drone-bee's reputation as lazy and a drag on the collective derives from the observation that its life revolves around the attempt to procreate with a queen, which is literally their end, albeit not a very romantic one: 'The few drones which succeed in mating queens can do so only once, since they die immediately after mating, when their abdomens and genital apparatus rupture' (Winston, 1991: 199). Thus, every drone is a virgin. The drone-bee is a sex machine. He performs no utility other than his continuous attempts to procreate with a queen. A drone-bee is born from unfertilized eggs, therefore his sperm cells are genetically identical, not possessing the recombinant potential of dual sets of chromosomes (41). 'Drones are produced and maintained, only when colonies can support them and when queens are potentially available for mating' (199). When a colony no longer wishes to support drones, they are ruthlessly hunted down and killed due to their lack of stinger.

In Bernard Mandeville's *The Fable of the Bees or Private Vices, Publick Benefits* published in 1714, the human drone is figured as the bad consequence of attempts to repress private interests or passions in the *interest* of the common good, or public benefit. 'Charity, where it is too extensive, seldom fails of promoting Sloth and Idleness, and is good for little in the Commonwealth but to breed Drones and destroy Industry' (Mandeville, 1714: 223). For theorists of Mandeville's ilk, a proliferation of drones is threatened if the commonwealth attempts to coerce the industrious subjects into

relinquishing their selfish passions and interests. In this conception of liberalism, strict moral considerations are to be pushed aside and private vices permitted – even encouraged – as they stimulate the worker's industry and therefore the harmony of society as a whole. The role of government, then, is to maintain an economic space, an economy in which the pursuit of private interests is encouraged without regard whatsoever for public benefits. Economic actors, or *subjects of interest* as Michel Foucault refers to their liberal figuration, could do nothing more destructive for the collective than to concern themselves with the common good (Foucault, 2008).

In the liberal conception, common good is produced as the fruit of recombinant selfish interests, a general concord from particular discord. Indeed 'Man's natural Love of Ease and Idleness, and Proneness to indulge his sensual Pleasures, are not to be cured by Precept: His strong Habits and Inclinations can only be subdued by Passions of greater Violence' (Mandeville, 1714: 263). The error of the drone, as an allegorical character in a cautionary tale, is not only that he is slothful or a burden, but additionally that he performs a lazy concord, stages a destructive harmoniousness, and that while somewhat attractive and easy, is nevertheless a danger to the ultimate harmonious existence of the collective. The drone is not critiqued as hedonistic, in fact pleasure seeking is viewed positively. Rather, the drone is an under-stimulated, idle, comfortable and satisfied subject who goes with the flow.

This figuring of the drone as an exemplary model for the illiberal subject of a conservative order is common. For example, the giving of an office to 'a mere drone, the son of the former incumbent' (Cockburn, 1852: 309) is attacked. Such a drone is incapable of self-realization, possesses no spirit of enterprise, and is therefore reprehensible. The term is equally applicable to usurers and monopolists, 'The lender, because a lender, admits that he is a drone; that, having no enterprises of his own, he is ready to participate, usually without voice in the management, in the enterprises of others' (Moors, 1916: 23) and, 'the usurer is the greatest Sabbath-breaker, because his plough goeth every Sabbath; and that he is the drone Virgil speaketh of' (J.F.B Usury 1865: 329). One of the Chartist songs from the 1840s confirms, 'Our toil hath filled the coffers of the drone' (Quaife, 1921: 51). Indeed unjust situations, such as those in which the 'employee is compelled to pay tribute to a drone for the privilege of working' (Commons, 1905: 61) are to be denounced.

M.H. Temple, writing in 1919, chose the beehive as an exemplary model for what he understood as the ruthless organization of human society under Bolshevism. This figuring of the drone turns around the colloquial understanding of the time, portraying the drone as a bumbling – albeit privileged – pleasure seeking male unjustly treated by a brutal, utilitarian, and cruel matriarchy: 'To the Bolshevik bees the drones represent the idle rich, the leisured class, and being much more logical, and one might add more intelligent Socialists than their human counterparts, they make such use of this class as they can before applying to it the more conspicuously Bolshevik principles' (Temple, 1919: 60). Earlier, Temple notes the Bolshevik principles: 'Work for the hive being the only thing worth thought, and sex being a notoriously perturbing circumstance' (Temple, 1919: 57). Indeed, sex is so frowned upon by the Bolshevik bees that the sexual organs of the vast majority of worker have been removed, the drone being an exception to this rule and therefore unfairly stigmatised (and killed) by the Bolsheviks. Temple's figuring of the drone is unusual among the texts that I have thus far compiled only in that the drone's pejorative qualities are presented as a means to figure the larger social organisation (Bolshevism) as intolerant. One might assume therefore that the ideal hive, would be tolerant - and more importantly, supportive – of those members of their colony who are content to do naught but enjoy their sexual organs. This tactic is used elsewhere, for example to write about Quakers, who 'had no use for drones, all had to work alike. A lazy man they disposed of. If they could not get rid of him any other way they would just hate him out of the hive' (Barlow, 1912: 270). The figuring of Quakers is, however, tinged with admiration for their stiff values.

The drone-bee is mobilised in these texts within an allegorical figuring of the hive as the space of human collectivity. The idea of the hive would seem to presuppose a set of rules in which individual participation is understood, or judged, as a function of the individual's contribution to a collective endeavour. The majority of the hive's inhabitants are working bees that do not simply work, but are industrious in their work, exemplifying a spirit of enterprise that the drone lacks. The 'drone, instead of running after life, lets it come to him' (Greever, 1921: 223).

Bourdon and Drone

> And they are neither few, nor of the weakest Sort of Men, that have thought the Concord of Discords a firm Basis for Government to be built upon. The Business is to Tune them well, and that must be the Skill of the Musician. (William Penn, 1686: 259)

The bee's droning sound is produced by the high speed flapping of its wings. As a sonority, a drone is a continuous tone or chord. In musicology the drone is understood less as a sound on its own than as a *technique* in which it holds a central position in a musical work's structure (Moll, 1997: 27). The drone allows other voices to move around, and in opposition to it, departing from, and returning to its centrality. The melody may depart into dissonance, yet return to harmonise the drone. The liturgical voices of Gregorian Chant use the drone technique, as do bagpipe music, Indian ragas, early blues music such as Mississippi Fred McDowell, Inuit, and Mongolian throat singing, Sonic Youth, John Cage, and La Monte Young; to name just a few examples. In each of these cases the drone might be inserted as a single voice, but its qualities are revealed in conjunction with other voices. In an example such as La Monte Young's 1962 *The Second Dream of the High-Tension Line Stepdown Transformer From the Four Dreams of China*, a work that is perhaps the closest example here to a pure drone sound, we can find in fact multiple drone voices operating at pitch intervals from each other.[6]

In the Western musical tradition, the drone as a technique, has played a central role in the transformation of the monophonic, plainchant music of the Christian liturgy, to the polyphonic complexities of classical music (Weber, 2002: 649).[7] Polyphony – in contrast to monophony – is that music in which multiple voices are heard, each with a rhythmic independence, and relatively equal melodic importance, thus doing away with the dominant drone. The non-drone music of Bach's Brandenburg Concertos might be contrasted with music from the Codex Calixtinus, organum music from the 12th century Notre Dame school that, while indicating the drone's eventual departure, nonetheless still makes full use of the drone. A further contrast may be found in archaic Byzantine chants, largely monophonic chanting with the faint maintenance of a drone (or *Ison* in the Byzantine context) in the background. 'Drone', then, can be understood as an index by which music is played; a pillar or support that enables the participation of contributors who do not

require knowledge of musical notation, so long as they can hear the drone and orient their contribution around it. In the Western musical tradition, the development of the polyphonic music discussed above runs concurrently with the development of musical notation, the notation being a necessary precursor for complex rhythmic and melodic independence and departure from the dominant drone.

Bourdon, from the French, is the more commonly used term in the musical lexicon to refer to the drone as a *technique* and is interchangeable with *drone* in musicology. 'Bourdon is one of the few instrumental devices common to both Eastern and Western music. It is the prototype of a combination of simultaneous sounds and therefore belongs outside the realm of polyphony. Obviously, the bourdon of the East, with its many regional variants, antedates by far that of the Western civilization' (Gerson-Kiwi, 1972: 9).

In French, *bourdon* is both bumblebee and drone-bee. It can refer to the growling of a bear, or to the sound of a bagpipe, the bass droning sound that supports a melody, or indeed to a pilgrim's staff, or anything that points to the ground and serves as a support (Collins, 2010: 115). Bourdon is 'the indispensable regulator which maintains the identity of a specific melodic character, or mode, as opposed to the splitting forces of progressive ornamentation' (Gerson-Kiwi, 1972: 10). Bourdon equally refers to the refrain, the recurring motif in a musical work. Bourdon can additionally stand in for the English term 'blues' (*I've got the blues* or *J'ai le bourdon*) (Collins, 2010: 115). In this sense, the terms 'drone' and 'bourdon' slip and slide together, as traditional blues music is exemplary of the bourdon technique. Perhaps informed by the Anglo-American notion of 'drone' in terms of work or labour, a clerical error may be referred to in French as a bourdon, and the inattentive worker himself as a *bourdoniste* (Ibid: 115).

The root of the term 'bourdon' is found in the Latin *burdo*, referring to a mule (offspring of horse and donkey) but 'especially used for carrying litters' (Lewis, 1879: 255). *Burdo* splits via Germanic languages to the English term burden (colloquially understood as an encumbrance, weight, load, onus, worry, responsibility). In its archaic usage 'burden' carried much of the same meaning as 'bourdon', yet following the Oxford English Dictionary the term expands the already wide purview of 'bourdon', bringing in additional attributes such as, 'an oracular judgement. (Understood as) a burdensome or heavy lot or fate', that which is borne in the

womb (child), that which is borne by the soil (crop), the theme, or gist of poem, song (OED, 2010: 222).

In the Christian musical tradition the 'drone' or 'bourdon', deriving as it does from liturgy, is indeed the historical *burden* in the colloquial as well as the etymological sense. The move from bourdon to truly polyphonic music was an escape from the burden of liturgy, the obligatory repetition of scriptural texts. The drone chant is a modest, meditative prayer and embellishments and ornamentation were thought to encourage passions. Indeed John of Salisbury – in a 12th century review of the Notre-Dame school's proto-polyphonic organum music – rhapsodises over the 'soft harmonies of the various singers, some taking high and others low parts, some singing in advance, some following in the rear, others with pauses and interludes…' (Hayburn, 1979: 18) yet '[w]hen this goes to excess it is more fitted to excite lust than devotion; but if it is kept in the limits of moderation, it drives away care from the soul and the solicitudes of life, confers joy and peace and exultation in God, and transports the soul to the society of angels' (Hayburn, 1979: 18). Thus the drone can be understood as a standard of moderation and rule, while the pleasures exploring its outer limits are palpable, yet cautioned.

Liturgic Refrains

The liturgic drone of chanted texts provided the sonic ground for the musical ornamentation and flights of fancy that over millennia produced polyphonic music. Droned liturgies can also be understood as the repetitive refrain of religious rule. In *A Thousand Plateaus: Capitalism and Schizophrenia*, Gilles Deleuze and Felix Guattari understood the refrain as being the 'content of music' because 'Music is a creative, active operation that consists in deterritorialising the refrain' (1987: 300). Put another way, music is a form in which a transformation of the refrain or repetitive rule is exercised. This is not always comprehended as liberation. The refrain may also be understood to produce a comforting sense of interiority and exteriority, a perimeter.

Giorgio Agamben writes that the modern notion of liturgy emerges historically from St. Benedict's Rule (4th or 5th century), and coincides with the concept of *Opus Dei*, that is, God's work. To roughly summarise: in the monastic order, exemplified by St Benedict's rule, the liturgy imposed upon the cenoby a rule that – as

a *form of life* – constructed an authoritarian order in which there was no separation between *the rule*, and life itself (Agamben, 2013a: 1-8; Agamben, 2013b).[8] It was the liturgy that provided the glue by which the rule was made consistent with life itself. Beginning with *lectio*, the ritual (and constant) reading aloud of texts, the liturgy transforms into *meditatio*, the recounting of memorized texts by the individual, over and over, as a refrain or indeed the drone of a hushed voice that is *never absent*. Liturgy was intimately connected to manual labour, and the monk was to perform his manual labour at the same time as he was to meditate upon the refrained bits of scriptural text through which his experience was filtered into consciousness (Agamben, 2013a: 24). 'As *meditatio* renders *lectio* potentially continuous, so every gesture of the monk, all the most humble manual activities become a spiritual work and acquire the liturgical status of an *Opus Dei*' (83).

In the *koinos bios* – the common life of the cenoby – the individual monk's experience is entirely filled with text, either read to him as *lectio*, or recited silently from memory as *meditatio*. 'As soon as the signal of the trumpet that calls them to the *collecta* sounds, he [the monk] immediately comes out of his cell, meditating on some passage of Scripture (*de scripturis aliquid meditans*) until he reaches the door of the meeting room' (Bacht cited in Agamben, 2013: 82). Thus the life of the monk, under the cenobitic regime is lived quite literally upon a *stream of droning text*: 'The monks do away with the separation and, by making their form of life a liturgy and the liturgy a form of life, institute between the two a threshold of indiscernibility…' (Agamben, 2013a: 83).

The life of a monk is presented as 'a condition of absolute and uninterrupted legibility … The perfect life coincides with the legibility of the world, sin with the impossibility of reading (with its becoming illegible)' (27). Note the neat concurrence between the assertion of the cenobitic life as a transparency, and Adam Morris' similar figuring of the Young-Girl in Tiqqun's text as a drone: 'the Young-Girl renders herself transparent to the shimmering gaze' (Morris, 2012). In both cases the human body renders itself transparent, the liturgy is not imposed from without but is a work performed by the body itself.

One of Agamben's hypotheses is that the routinisation of life – that is to say the rational organisation of activity into temporal, horological units and points, *naturalized* in the present experience – emerged from the cenobitic rule. Indeed he warns that 'we must not

forget that it is in the cenobitic *horologium vitae* that time and life were for the first time intimately superimposed to the point of nearly coinciding' (2013a: 24). With the adoption of the mechanical clock into monasteries and then towns around the 13th century, the division of time seeped out over the monastic walls and down into the villages. There the tower bells rang not just for the closing of gates, but also for the working hours (Mayr, 1989: 1), the heaviest bell in a peal being the *bourdon*.

For the 18th and 19th Century advocates of liberalism, the monastic life seems to have perfectly exemplified the shuttered, monotonously disciplined order that for them produced nothing but apathy and wasted potential. Indeed, in Mandeville's *Fable of the Bees*, we can find the following:

> That boasted middle way, and the calm Virtues recommended in the Characteristicks, are good for nothing but to breed drones, and might qualify a Man for the stupid Enjoyments of a Monastick Life, or at best a Country Justice of Peace, but they would never fit him for Labour and Assiduity, or stir him up to great Atchievements and perilous Undertakings. (Mandeville, 1714)

Tuned In

> Be it known that I, NIKOLA TESLA, a citizen of the United States, residing at New York, in the county and State of New York, have invented certain new and useful improvements in methods of and apparatus for controlling from a distance the operation of the propelling engines, the steering apparatus, and other mechanism carried by moving bodies or floating vessels, of which the following is a specification… (Nikola Tesla, Patent US 613809 A, filed July 1898)

Perhaps the first modern attempt at remote control was undertaken by Nikola Tesla, whose plans considered the distance control of boats via electrical currents transmitted through the ground itself. However, patents filed in the 1920s and 1930s make it clear that modulated sine waves transmitted via radio became the normative means by which to experiment with control at a distance.[9]

The early development of remote control always hinged upon the coming into agreement of bodies by way of mutually comprehensible signals. Put another way, the unmanned vehicle can be understood as an entity that must be made to comply with the wishes of its would-be controller. A radio receiver might be positioned in the cockpit of an aircraft, but if there is no human pilot to interpret the broadcast instructions and distribute the will of the controller into the physical manipulation of controls, how then will the aircraft 'know' what to do?

In wireless terms, the coding of a message onto a wave is called modulation. For example, networked digital communications transmitted over telephone lines require a modem (mo-dem is an abbreviation for modulator-demodulator). A modem is capable of both encoding, or modulating, a message on to a carrier wave output, and de-coding, or de-modulating, a carrier wave input. In the early days of wireless control, resonant reeds made from metal were used as demodulators by which radio messages could be decoded once received. At the United States Naval Research Laboratory in the 1930s the reed apparatus was mounted upon an 'electric dog' (Hoyt Taylor, 1948): a small cart with three wheels that was extensively used for testing the wireless control mechanism.

Resonant reeds resemble a finer, more fragile version of the tines of a tuning fork. Each reed is finely machined so that as a sine wave reaches the receiver, the modulated frequency of the wave will cause the corresponding reed to resonate. The vibrations allow an electrical contact to be made, therefore triggering an actuator. In a working resonant reed array, only one reed will vibrate for any given frequency, the others being tuned to different frequencies. In this way, the reed receiver is engineered to be an essential part of a relationship; a wireless decryption device. A radio transmitter might send out a sine wave, the frequency of which is modulated in a technique called frequency-shift keying (FSK). In FSK the sine wave is coded, or modulated by the structured patterning of transmitted frequencies, demodulated by the reed receiver. The vibration of the reeds as they receive their coded message results in a warbling, drone sound. The droning warble, shifting and modulating in pitch and intensity, is the mating call of bodies in conjunction, with nothing but air between them. The audio performance of the electric dog would have sounded like a rougher version of La Monte Young's *The Second Dream of the High-Tension Line Stepdown Transformer From the Four Dreams of China*.

The early projects of remote control involved making the body to be controlled literally dance to the tune of the controller. Teams of scientists and engineers transmitted sine waves to bodies connected by nothing other than air. With the turn of the dial the object began to emit a warbling, droning sound as the corresponding reeds vibrated at a high intensity. The drone sound began to signify that the body and its handlers had successfully been synchronized, tuned in together, on the same page, made collective. The droning indicated that the body now possessed a life, was part of the team, was no longer inert and dumb, was cooperative. The experience of a disconnected, *headless* object displaying a kind of jerky and mechanical intentionality, was conjoined with the bizarre bourdon sound.

In later, more developed experiments the propeller of the airplane no doubt out-droned the reed receiver, which in any case was eventually replaced by transistors and solid state instruments. And yet in this initial conjunction of a mesmerising sonic experience and the observation of control at a distance of an otherwise inert body, the ambivalence of the drone's designation as a site of the resolution to harmony from dissonant bodies, might have already been established by its first practitioners.

Resonant Bodies

As I have suggested, the initial use of the term 'drone' referring to a remotely piloted aircraft in 1936 (Howeth, 1963) does not emerge out of thin air, but is contemporaneous with an ongoing discourse around the drone-bee in particular, and the hive more generally. The statements around the Bolshevik Bee (Temple, 1919), calls to, for example, 'arouse the drone to get control of his life forces and apply them to his study' (Morphy, 1918: 52), and Greever's comments on the unenterprising drone (Greever, 1921: 223) are produced less than two decades before the drone becomes associated with unmanned aerial vehicles.

In a passage from *Minima Moralia* Theodor Adorno refers to the German V-1 bombs and V-2 rockets as manoeuvring yet subject-less: '"I have seen the world-spirit", not on horseback, but on wings and without a head, and that refutes, at the same stroke, Hegel's philosophy of history' (1951: 33). What Adorno refers to is the perhaps tongue in cheek intuition that the notion of a leader embodying a world-spirit seems ridiculous in light of self-guiding

munitions. A self-guiding projectile is unmanned, and, while its subjectivity is ambivalent, it nonetheless 'wants to kill' (Galison, 1994: 228). The important distinction is that the drone is not self-guiding; yet from the point of view of an observer, how is that to be known? The guided torpedoes and bombs of the Second World War exhibited intentionality to the perceiver. The networked drone possesses an ambivalent relation to the collective in that it displays a kind of autonomy, even though it is not autonomous at all. Perhaps it is not so much a case of *applying* the term 'drone' to the object, but the opposite: bringing the body in as a drone, a droning of bodies.

According to Zygmunt Bauman, ambivalence is a language disorder in which there exists the possibility of assigning an entity to more than one category: 'It is because of the anxiety that accompanies it and the indecision which follows that we experience ambivalence as a disorder' (1991: 1). Experienced as a disorder, symptoms of discomfort, anxiety, indecision, and uncertainty surround an inability to properly read or interpret situations. Ambivalence problematises narration because it suppresses the naming function of language. Authenticity, judgement, and intentionality are thrown into question.

Expeditionary Architectures

Regarding the drone or bourdon as a sonority, it is clear that the drone refers to the production of territory, the refrain as a rule and as a perimeter. This territorialising occurs spatio-temporally, dictating pace and rhythm, and occupying space. In the contemporary drone, the remotely piloted aircraft, such territorialising activity is obvious. The drone enables the transgression of border regimes precisely because it is unmanned; it may pass in a way that a human body cannot. In both of these domains, drone as sonority, drone as RPA, the drone produces knowledge of an exterior and interior, and of territories. The drone as an allegorical figure within the metaphor of the hive does something similar, as the hive metaphor mobilises enterprise and work as a means of defining the territorial lines of a society. In the statements around the hive, there is never a discussion on spatial territory, rather to be included within the hive is a matter of moral right, a discourse that produces knowledge around social obligation, labour, and duty. The drone occupies a liminal space in the hive with one foot in, and the other already on its way to the outside, in a manner that is not possible for the enterprising workers.

Perhaps it is useful to consider the drone in terms of an *envelope* of control. By envelope I mean that the drone produces an enclosing wrapper, layer or structure that holds together and maintains the coherence of a unity. In this sense the drone might be considered expeditionary.[10] An expedition is understood as a journey, or a voyage into unknown or inhospitable territory. Often expedition has a military connotation or at least the sponsorship of an institution or state. An expedition is undertaken as part of a greater project, to seek knowledge of, or lay claim to an outside. It can be understood as an expansion, a pushing out while maintaining control, but not necessitating (nor obviating) settling, cultivating or caring. Expedition has an historical association that links the term to colonial expansion. The Portuguese Carreira d'India, cyclical expeditions from Lisbon to Goa during the fifteenth century, were undertaken only after the means for control at a distance were in place. Control at a distance was only made possible by the envelopes that were made up of devices, documents, and drilled people and provided the Armada's shape and envelope of 'undistorted communication and long-distance control' (Law, 1986: 234-263).

In the argument above, I have attempted to sketch a constellation of the drone as a political-historical assemblage. The major intensities of this constellation are the drone-bee within an allegorical figuring of the beehive, the drone/bourdon musical technique, the liturgic tradition emerging from the cenobitic rule, and the present day designation of a remotely controlled body. It is evident that these designations of the drone possess multiple points of connection, slipping between registers. It is interesting to consider how the current manifestation of the UAV as a drone impacts the ways in which collectivity, labour and a general political organization of bodies is understood. The drone as remotely controlled object inserts a paradoxical pill into the political discourse around the organization of the collective. If the drone-bee provided the early liberal theorists with a vivid allegorical villain, it would be difficult to say that contemporary advocates of (neo-)liberalism feel the same way about their drones. The drone enters into the contemporary discourse as an ambivalent entity, a *pharmakon*, but it is quite possible that it has been so all along.[13]

The drone is not the thing itself, the remotely piloted object. Rather the drone is a *thickness* in which bodies are juggled, so to speak, guided and held aloft. As such the drone pulls bodies into a collectivity. The drone as a thickness, produces a cohesion that at the same time allows for flight, the departure from an obvious

centre. The fact that remotely guided aircraft are observable in relief against the sky is important insofar as the air's transparency has made some of the drone's properties visually evident to observers. This performative aspect of the colloquial UAV seems to have absorbed the attention of observers, acting as a decoy, or veil. The drone is a *conceptual figure*, a producer of knowledge and reason that has been overlooked while we have been staring at something in the sky.

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Notes

1. There is a flurry of numbers on this score. See Gregory, 2011: 194 -195; Benjamin, 2012: 21; Asaro, 2011: 12.

2. This is not to assert that the Americans followed the British in the development of remote control technologies. That story is much more complicated. My inquiry here is confined to the mobilisation of the term *drone*.

3. Letter, dated Nov. 1936, Director, Naval Research Laboratory, to the Chief of the Bureau of Engineering (cited in Howeth, 1963).

4. 'Young-Girl' here is figurative, as Morris (2012) explains: '"She" is both an exponent of and metaphor for the commodification of social life under late capitalism into consumerist "types." The Young-Girl can also be – and often is – a "man in power": the two figures "in every way resemble each other when they don't simply coincide'.

5. See, for example:
https://www.youtube.com/watch?v=yfZzz58VUaw. Accessed 29 December 2014.

6. Plainchant is a form of monophonic, unaccompanied sacred song of the Roman Catholic Church. In the following example it is possible to hear how the plainchant monophony differs from polyphony. While multiple voices are heard in plainchant, they are in rhythmic unison.

7. There are important distinctions between monastic orders. The cenobitic orders are those in which a radical form of communalism was established. This is in distinction to, for example, hermetic monks.

8. See, for example, US 1597416, Carlos B Mirick, *Electrical Distant Control System*, 1923. Mirick ran the Naval Research Laboratory. US 1766524 A, Edward H Loftin, *System of teledynamic control*, 1923.

9. A US patent from 1939 explicitly details the functioning of reed receivers as I have described it: 'I claim as my invention: In a radio remote control system, a manually portable remote control unit operable without battery or external power supply means including a plurality of tuned vibratory reed elements each responsive to a different audio frequency (…)' US 2293166 A, Harry F Olson, *Radio remote control system*, 1939.

10. I have taken the term *expedition* from the title of the Expeditionary Architecture Integrated Program Office (NEA is the acronym), a division of the United States National Geo-Spatial Intelligence Agency (NIA). NEA is charged with what amounts to the establishment of a worldwide communications network infrastructure that aims to enable the collection of Activity Based Intelligence (ABI) defined by Keith L. Barber, director of NEA as 'a discipline of intelligence where the analysis and subsequent collection are focused on the activity and transactions associated with an entity, a population or an area of interest. These activities and transactions are not solely tied to geospatial actions, but also apply across the cyber, social, financial and commercial domains' (Barber, 2012). Roughly speaking, the NEA and NIA provide the communications infrastructure for US military drone projects and handle the way that harvested information is exploited.

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