



Opti-hunting

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Opti-hunting

Opti-hunting encapsulates a positive environmentalism. It visions a future where bird hunting is transformed into a pro-conservation sport that enriches lives and economies without a bird being killed.

New technological forces are turning physical objects into software. The Opt i-Gun is a gun-telescope-app-phone hybrid: a 21st century gun where a bird 'hit' becomes digital data rather than a corpse. As a mobile computer, the Opt i-Gun integrates the practice of hunting into the social networked and app-based computing environment that is shaping human sociality and society.

The issue and market opportunity

Hunting is an ancient pastime that remains hugely popular across social classes. In the EU there are an estimated 7 million hunters¹: participation in hunting is comparable to sports, ranging from football to tennis. Bird hunters kill an estimated 500 million birds as they migrate through the Mediterranean each year. Migratory bird-hunting may be growing in countries of the Middle East and North Africa².

Hunters speak of a great affection for nature. The enduring popularity of the pastime derives from its combination of outdoor recreation, goal setting, sense of achievement, camaraderie and story-telling. It offers a passion and focus – a domain of life - that is separate from the pressures of work and family. It is a nature-based recreation that enriches well-being and economies.

However, practices such as migratory bird hunting reduce bird populations, contravene environmental policy, antagonizes influential animal welfare publics and create perceptions that bird-hunters are cruel killers and a throwback to an uncivilized age.

It is well know that men spend well on their hobbies. A 1995 study estimated that European hunters spend an average of €1500 on their hobby and put the total EU expenditure on hunting at €10 billion pa.³ A hunter will pay €800 upwards for a shotgun, a keen bird-watcher upwards of €1000 for binoculars and for a telescope. It is expected that Opt i-Guns could be produced at comparable prices. Opti-hunting would appeal to existing hunters and people with hunting-tendencies but who eschew killing. In addition opti-hunting is able to realize the exciting market opportunities offered by new technologies relating to on-line services, pay-for apps etc. The commercial opportunities of opti-hunting could be huge.

The Opt i-Gun

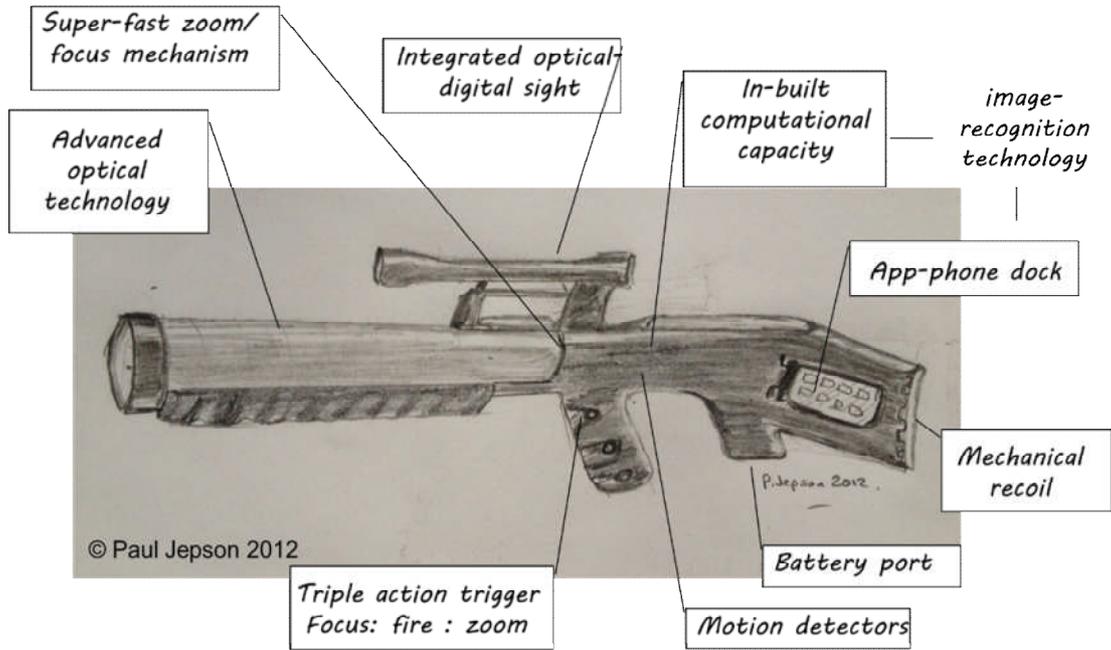
At the centre of this vision is the Opt i-Gun: a hybrid of a gun, spotting scope and app-phone technologies that retains the 'feel' of the gun and sense of the hunt whilst immersing the hunter in a socially networked gaming, sport and citizen science environment.

¹ Federation of Associations for Hunting and Conservation of the EU. Manifesto 2009-2014 <http://www.face.eu/Intergroup/documents/Manifesto-2009-EN.pdf>

² BirdLife International http://www.birdlife.org/action/change/sustainable_hunting/index.html

³ Pinet, J-M. (1995) The hunter in Europe, FACE/Institut National Agronomique Paris-Grignon,

The Opt i-Gun (Jepson Prototype)



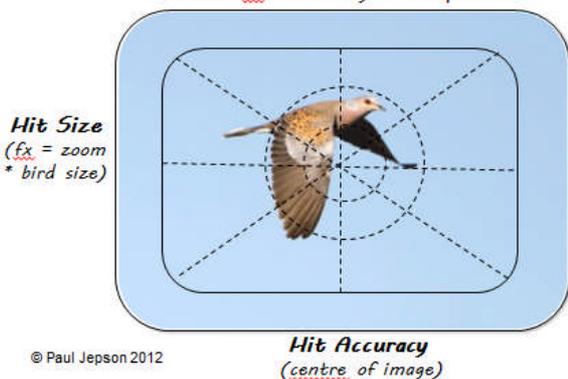
In the Opt i-Gun a telescope replaces the barrel and a triple action trigger replaces the conventional trigger. The gun is loaded with batteries rather than ammunition and a mechanical recoil retains the instant feedback experienced when firing a shotgun. The gun butt incorporates an app-phone dock. This turns the gun into a mobile computer with 4G connectivity to cloud computing and personalized to the community and interests of the gun user. The app-phone interfaces with built in electronics that drive the focusing/zoom mechanisms and extend the image processing and other computational capacities beyond what is available on an app-phone.

The software hit

Two scores automatically generated by image processing software constitute a hit level.

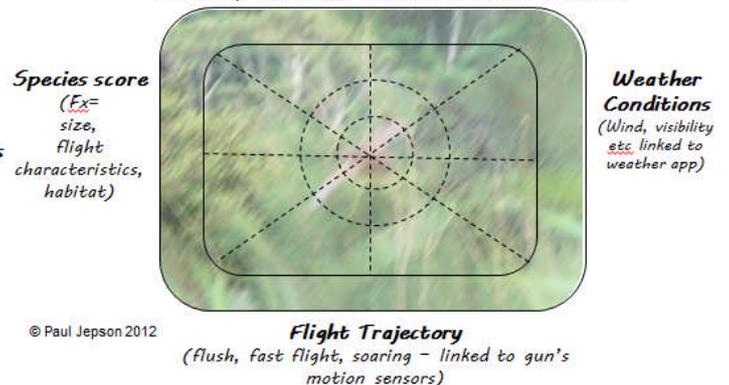
The (soft-ware) Hit

Hit Score $fx = accuracy \times sharpness \times size$



Hit Difficulty

Difficulty Score $fx = species \times trajectory \times weather$





To calculate hit accuracy and hit difficult scores it will be necessary to know the identity of the bird species hit. In first-generation Opt i-Guns this could be self-attributed by the hunter and validated using an online reputational system (such as that used in iSpot⁴). In future models image recognition algorithms could automated identification and/or create a machine supported identification system. NB. The bird images would be normally much smaller than in this illustration unless the hunter got very close to the quarry.

Socially networked hunting

Hunting has always been a social pastime. The Opt i-Gun would take this dimension to a new level. The Opt i-Gun will transmit images and associated metadata to an opti-hunting user interface platform. This would have similarities with birding platforms such as the BTOs Birdtrack⁵ where data is amalgamated and used for research and conservation purposes but where individual contributors have access to their data and a suite of analytics. In the opti-hunting platform these user analytics would be expanded to enable, for example, the creation of leagues among friends or in particular territories. The creation of APIs would support the development of apps supporting different modes of hunting and creating new gaming and sporting environments at different levels of competitiveness.

Opti-hunting governance

The practice of opti-hunting would be governed by an opti-hunting association. This would establish the rules of opti-hunting, the species-related values in the hit accuracy and difficult algorithms and generally promote sporting ethics. It would also establish protocol to stop opti-hunters uploading multiple 'sitting ducks. This governing body would add to the richness of opti-hunting by adding a third 'encounter & hit difficulty value' based on an analysis of the profile of all hits uploaded onto the platform in a particular year, season or territory. Given that hunters in many countries already have active associations and strong codes of ethics such self-governance is likely to be respected and effective.

The use of the Opt i-Gun would need to be regulated by governments. Three groups of problems are identified: excessive disturbance to habitats and sites, public privacy issues and publics mistaking an opti-gun for an assault weapon. Because the Opt i-Gun requires an app-phone to operate it would be relatively easy to govern. For instance, the Opt i-Gun could be electronically disabled in certain locations or at certain times. Similarly image recognition technologies create the possibility to disable the gun if it points at humans or buildings. The prospect of increased visibility of a perceived weapon could be managed by a combination of design, public awareness, controlled use and the ability of the Opt i-Gun to transmit a digital identifier.

⁴ <http://www.ispot.org.uk/>

⁵ <http://www.bto.org/volunteer-surveys/birdtrack>



Opti-hunting and conservation

Opti-hunters would generate a rich flow of species-based data. With the development of appropriate algorithms and models this could support enhanced environmental management and conservation decision making. The conservation and scientific value of data could be further enhanced with 'conservation hunting' apps that add a conservation value function to hit scores and/or identify species, areas or dates where 'hits' of species would be particularly valuable.

Significantly the tensions between bird-conservation and hunting lobbies would dissolve. Opti-hunting would create a powerful citizen lobby calling for policies to restore bird abundance and for sufficient leisure time to peruse the hobby.

Opti-hunting and enterprise

The introduction of the Opt i-Gun and opti-hunting would create a rich nature-technological-social network with multiple enterprise opportunities. Five enterprise groups are identified but there could well be more and, as yet unimagined, business opportunities.

1. The Opt i-Gun can be produced in many different models: from the affordable youth market model with cheap optics and electronics and operating off Dad's old smart-phone to those with high-end Leica or Zeiss optics, Samsung electronics and a hand crafted design operating off the latest App-phone. In addition, serious opti-hunters would probably own two or more Opt i-Guns: a model for plains and a stubbier model for forests.
2. The opti-hunting official platform would offer a free service based on the principle of 'you donate your hunting data for the public good and in return we provide a nice interface to manage and analyse your personal hunting data'. However, there will be a healthy market for premium membership services that offer contextualising analytics, more sophisticated tools and access to specialist forums and advice.
3. As the opti-hunting hobby takes off the flows of temporally and spatially located hunting data will provide an informational resource that can support and catalyse a myriad of pay-for apps. For instance, at its most basic there would be a big market for an App that tells opti-hunters at what times their hunting buddies are out and about.
4. Although this will need more thinking through, an in-hunting informational flow should interface with gaming design and technology. One can imagine computational games that merge the social and natural worlds and virtual hunting games running off real hunting data at walk in (warehouse projection) facilities and at app-phone scales.
5. Once established opti-hunting could become a popular spectator sport? People of all physical and intellectual types can become top opti-hunters. People want heroes and want to see their heroes in action. An opti-hunting tournament - say a spring quail hunt on Malta - would involve exotic locations, cool, interesting guys and their kit, the uncertainty of the weather., migration and terrain, the sudden pulse of action, the great hits and near misses. The action could be visualised in multiple dimensions and from multiple angles: video of the hunters in the landscape and the hunter eye, DEM -style landscape tracking of individual hunters overlaid with symbols of past season quail flushes and hits. Timed opti-hunts would be great for in-game betting!⁶

⁶ This scenario is explored in my imaginary account of a future televised opti-hunt available at



Opti-hunting and EU Policy

The concept of opti-hunting supports the Europe 2020 strategy for a ‘smart, sustainable, and inclusive’ social market economy⁷. It encapsulates technological monitoring and develops and utilizes the educational and knowledge dimensional of a traditional sport. It is clearly sustainable, in that it would reduce the killing of wildlife (although still allowing for game hunting and management) and revitalize and extend connections between society and nature and between citizens and environmental conservation. Furthermore it is inclusive. People of all social classes and in all regions of the EU could opti-hunt. It would create numerous enterprises and employment opportunities and over-come deep tensions and antagonisms between publics in different territories that seem to undermine the democratic ideals of Europe. The UK and German campaign against Maltese bird hunting is one such example.

More specifically, opti-hunting would produce a rich stream of spatially and time-located environmental data that would support strategic scientific initiatives such as GEO-BON – the biodiversity observation network within Global Earth Observation System of Systems (GEOSS)⁸. Such systems are being developed to i) create the informational base needed to deliver EU and CBD biodiversity targets and ii) to create "citizens' observatories" that will empower citizens and citizen's associations to become increasingly active in monitoring environmental quality and in the co-production of policy and plans to assure the sustainable management of natural resources.

What would it take to realize this vision?

Phase 1

- Research the question of for what proportion of hunters is the killing an important component of the sport.
- Build and test a prototype Opt i-Gun, ideally as a partnership between a university, an optical and technology company, and a hunter federation. Development and testing of a prototype opti-hunting platform and mobile apps with the same partners plus a software and user interface design company.
- Enrolment of celebrity and/or elite hunters in the testing and development.
- Formation of an opti-hunting association.

Phase 2

- Production specifications for an entry-level and mid-price opti i-Gun
- APIs to allow 3rd party app development
- Social marketing campaign promoting opti-hunting
- EU policy to restrict conventional hunting at pre-defined date (cf light bulbs)

⁷ http://ec.europa.eu/economy_finance/structural_reforms/europe_2020/index_en.htm

⁸ <http://www.earthobservations.org/geobon.shtml>