

This draft is an invitation for us to work together on the Robin Hood 2.0 protocol in the Robin Hood Office in Milan 1-4.5.2015. It is written for the use of our team:

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Equity, Options, Assemblage

Robin Hood 2.0

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Part I. Event

- a. Difference engineers
- b. New differentiations
- c. Blockchain
- d. Synthetic Finance

Part II. Robin Hood 2.0

- a. Summary
- b. Phase One
- c. Phase Two

Part III. Concepts

Part IV. Sources

Part I. Event

Difference Engineers

When Robin Hood released the Parasite in August 2012 it was simultaneously introducing three radical notions.¹

First, by placing within capital markets a data mining-algorithm whose strategy is to locate, track, and replicate the moves of financial markets' most successful actors, Robin Hood had engineered a funding cipher to capture a portion of the surplus circulating within financial markets, to siphon into mutual equity-sharing and equity-building applications. Robin Hood, in this respect, is the first hedge fund of the precariat. By replicating an emerging convention in financial markets, we produced a bad copy of a model that overturned the grounds on which any distinction between copy and model could stand. We created a simulacrum, a monstrous, false power, yet whose repetition yields to existence a new difference in kind. Second, by virtue of its decentralized governance structure, the manner of distributing all shared proceeds are autonomously decided by its denizens. Common member practice, for example, is to retain half of the Parasite's profits, opting to allocate the other half to member-designed, deliberated, and voted-for projects. Third, this distribution is calibrated to facilitate creations of new and radically-different economic relationships, common resources and means of production, which are always more than only for themselves.

These innovations –of effectuating an algorithmic-based hedge fund of the precariat, assemblaged as a co-op of minor asset denizens, whose horizontal propulsions seek to write new options and operate programs of mutual equity– when reduced to its intensive essence, is the Robin Hood 1.0 protocol.

Equity, options, assemblage. How well has this protocol performed its function?

In two and half years, Robin Hood has grown into a cooperative of over 500 members,² with over \$0.5M assets under management.³ This is a miraculous first result, and at that, with practically no investments made towards marketing. In our first year of operation, our portfolio grew 30.74%, after-costs, qualifying us as the 3rd best performing hedge fund in the world at US market. As of

¹ We've mapped elsewhere the *raison d'être* of Robin Hood: The [exhaustion of possible](#) at our disposal. How this is related to the [way in which value is produced in financialized economy](#). How finance comprises techniques to [command the future by organizing the possibilities](#) of our thought and action, how [economy becomes the production of subjectivity](#). And how we need to take [this subjectivity, its opportunism and distrust](#), its affective overflow, its simultaneous feeling that everything is possible and nothing is possible, as a starting point for any [serious organization](#). For Robin Hood is belief in this world, not in some other.

² Number of members: 20 /June 2012 - 80/June 2013 - 226/June 2014 - 500/April 2015

³ Assets under management: \$12K /June 2012 - \$68K/June 2013 - \$420K/June 2014 - \$550K/April 2015

April 2015, our after-cost cumulative returns since inception is 43.15%. Depending on one's date of entry, these after-cost returns for every member are now between 53.60% (Series 2, September 2012) and 18.20% (Series 15, January 2014). Even with a such a modest AUM, Robin Hood has been able to generate over \$100K for its members, and for funding Robin Hood Projects.

We've learned a considerable amount during our [first two years of operation](#). And while Robin Hood understands its project to have only just begun, we sense an increasing inability to self-effectuate our full-power and scalability. For one, our product is still too one-dimensional: it doesn't create enough options for our members, and subsequently risks falling into 'small circulation' (members end up again with powerless consumption money in their hands). Second, we increasingly realize that if it's important to be able to turn money into capital, i.e. to make it work, to make it a means of production and organization, it's perhaps even more important to make its organization n-dimensionally dynamic. And finally, we wonder if now our organizational charter as solely a cooperative has not reached its endogenous limits?

For this reason, we are preparing to self-induce our own transmutation, and now turn to greet a critical moment whose encounter grows near.

What we know:

1. We must grow our common *equity*. A first step towards this is accomplished by increasing our assets under management (AUM).
2. We must also facilitate the creation and distribution of new *options*. For equity without options lacks dynamism and distributive force.
3. Our member base must grow. If we are to effect a clearing for a new aesthetics of economic *assemblage*, the number of Robin Hood denizens must proliferate. For this reason, our organizational structure must also be reappraised, transvalued, updated and made commensurate to the organizational demands of our present moment.

We intend to move forward our program of multiplicity-in-becoming with affirmation and joy. And we know that to remain sleek and nomadic, monstrous and couth, we must augment our strength, momentum, and *élan vital*. The only question is that of *how*? How do we better operate the objectives of our 1.0 protocol? How do we effectuate a fluid, flexible, autonomous organization, from which a heterogeneity of new options and possibilities spring forth?

These are our questions. These are our problems. Their definition awaits us.

The answer and solution? This summer 2015, Robin Hood will commence to bootstrap its original protocol with the installation of Robin Hood 2.0.

It is the little machine that we want to assemble now.

New Differentiations

When Leonardo Da Vinci dreamed of flying machines, he planned, he drew, he drafted, he experimented, but his schemes lacked a relation to the abstract and concrete machines to give the flying machine consistency. He lacked the generations of pooled knowledge, socio-political desire and economic means to concretize, to existentialize his machine.

Recent years have given birth profound evolutions of new technologies, whose historical-materialist significance we choose not to disvalue. On the contrary, we now commence to include ourselves as operators of their progressive differentiations.

One is the web-based technology of the blockchain, which, along with its subset technologies of [smart contracts](#), [distributed applications](#) (Dapps), and [decentralized autonomous organizations](#) (DAOs), leverage and extend the endogenous logic of the internet as a decentralized peer-to-peer digital protocol. The others concern a series of powerful financial instruments, engineered in finance, by finance, and originally for sedentary distributive purposes – but whose modification is not only possible, but due to their topological fungibility, are readily redeployed for nomadic distributive purposes. These are our new tools.

In this respect, Robin Hood 2.0 is at once both a repetition-of and differentiation-from Robin Hood 1.0. For example, the Parasite continues to siphon a portion of the surplus circulating within financial markets into mutual equity-building and -sharing programs; the latter continue to be created, deliberated, elected, and executed by its denizens; and Robin Hood retains its disposition as a mobile complex of heterogeneous assemblages.

However, our 2.0 protocol is predicated on a belief that execution of our 1.0 protocol now requires operations commensurate to our present technological moment: this involves a technical reengineering of synthetic and structured financial instruments, and their fusion with blockchain applications.

For what purpose? Once more for reopening the field of the possible, for writing new options by and for the precariat, for creating new equity by and for the precariat, whose distributed assemblages are capable of autonomously operating divergent modes of *co-poiesis*. In other words, for making Robin Hood fly.

About these technologies, then, a few words should be said.

Blockchain

It's well known that in 2009 Satoshi Nakamoto introduced the first fully-decentralized digital currency known as the bitcoin, which enables peer-to-peer transactions wherever there's internet access. Media attention has predominately focused on issues such as its absence of a central issuer or backing by a national bank, its price volatility, and possible uses in criminal activities.

However, increasingly we realize its radical innovation lies less with any of these, and even less with the bitcoin itself, than with the concept of the blockchain.

Economic transactions on a blockchain consist of the digital transfer of money or some other unit of value for goodserv: these transactions are collected in 'blocks', and then 'chained' together, comprising a visible, verifiable, digital, decentralized public ledger. Therefore any coupling of operators, however diffuse and heterogeneous, using a blockchain to organize themselves are immediately an autonomous, digitally-distributed, fully-decentralized consensus system, equipped with mechanisms for public memory, voting, and agreement on the order and character of all transactions – and importantly, therefore now with neither a need nor a place for a centralizing authority. This is organization at n-1 dimension, whereby any element aspiring to a position of centrality is subtracted.

In short, a blockchain is a public ledger, ready-fitted for a rhizome model of economy.

The bitcoin inaugurated the first wave of blockchain ledgers. What's now being called 'the second-wave' in blockchain technology involves a growing awareness that blockchains can do much more than simply process coin-based transactions. In fact, presently what's less clear are its limits. Ethereum and Eris Industries, among others, are currently developing and enjoining others to develop with them any number of new protocols, whose unbounded possibilities smart contract-enabled Dapps on a blockchain so readily facilitate. There is a nascent 'sense' that combining the algorithmic art of authentication with digitally-distributive public networks enable its operators to write new protocols, which secure new kinds of relationships, and whose endogenous capacities greatly exceed the limits of what was previously possible. It's not only that writing smart contracts on a blockchain for developing distributed applications awaken us to latent, preexisting possibilities. Rather, these technologies have distributed a new space of possibilities in itself – they've actualized new possibilities which were previously nonexistent; and it's therefore now up to us, as operators, to awaken-to, examine, and begin tinkering with and on them *for our own purposes*.

Synthetic Finance

The past 30 years have witnessed the progressive differentiation of a new class of exchange called synthetic finance, and a new mode of producing, consuming, and circulating debt called securitization (aka structured finance). These two financial instruments are justifiably regarded as the principal technological culprits of the 2007-2012 financial crisis; we know their sedentary use greatly augmented its scope and scale. Other financial derivatives, options for example, have been used for centuries (e.g. Aristotle writes of Thales buying options contracts on olive oil presses); and while often regarded as comparatively benign relative to their synthetic counterparts, options are nonetheless broadly regarded as yet another symptom of the specular excesses endemic to finance capital.

With all of this, to begin with, we might agree. Under the schema of their past and present manner of deployment, to be sure, financial derivatives, securitization, and their unholy union as synthetic securitization mark the dark arrival of a monstrous new species of financial assets. And from afar, there appears little doubt as to their peculiar materiality, debt-power, and capital metaphysics. However, their careful examination now also reveals – by this same reason – a plasticity or mutability, a deep operative topological capacity for fusion and scission, depending on user-demands, required tasks, and situation.

As we lean-in closer, to have a better look, what do we see? We see that:

Synthetic finance, in essence, is a technology for the fungible distribution of risk and cash flow, thus lending its operators a veritable method for self-arranging their own economic attractors, and their own refrains.

Securitization, abstractly, is a technology for the deterritorialization of risk and cash flow, and is therefore quite easily reengineered as an instrument for the dynamical creation and distribution of common equity.

Financial Derivatives, too, are chocked-full of intensive economic properties. *Options*, for instance, facilitate any number of customizable bilateral exchanges between those who write and issue new options and those who accept and exercise them.

Therefore, modifications made to the control parameters of these powerful financial technologies, in order to synthesize their redesign with web-based applications, will cause their benevolent alliance with Robin Hood's 1.0 protocol of options, equity, assemblage. For at their organic essence, financial derivatives, and synthetic and other structured financial instruments, equip their users with a pluripotent set of hyperfungible technologies for autonomous organization, their own self-deliberated manner of distributing economic flows, and therein enable the divergent creation of radically-new modes of assemblage – modes which were previously unavailable, impossible, or even nonexistent.

How will we greet our present technological moment, when encountering nomadic technologies, such as these?

One could simply attempt to ignore them, and turn back towards the past. One could also attempt to sedentarily use them, for sedentary economic and subjective effects. Or one can think and act commensurate to the moment, by *nomadically* using these nomadic technologies, in order to create and distribute new equity, new options, and new assemblages. A new economic space itself.

Robin Hood now wagers on this latter choice. This is the wager of our 2.0 protocol.

Part II. Robin Hood 2.0

Summary

During 2015-2016, Robin Hood will commence implementation of its 2.0 protocol. This comprises two phases.

Phase One. This includes funding mechanisms and development mechanisms. The funding mechanisms involve 'Hood Notes' and 'Robin Hood Services'. The development mechanisms involve commencement of bi-annual 'Hood Fairs' and continuation of our quarterly 'Hood Offices' pursuant to our research and development work.

In summary:

'Hood notes' involve the conversion of our 'share model' to now a 'note model', which will cause the growth of our AUM. We call these notes a 'first generation collateralized equity note', insofar as they're a new financial instrument, engineered by Robin Hood's research and development team, by fusing the concept of common equity with existing technologies in structured finance. Among their other benefits, these notes provide at once the same and more investment options to present and future Robin Hood denizens than is available under the existing 'share model'. Moreover, by also integrating the new possibilities made available by blockchain technology, viz. by encoding the note as a blockchain-deployed smart contract, the Hood Note engenders an augmented flexibility to our autonomous organization, and thus affords more options to our denizens. In this respect, the Hood Note is a key component of the transmutation of Robin Hood into something new: a first generation common purpose entity (CPE), and therein the initiator of one of any number of distributed applications (Dapps) englobed within a decentralized autonomous organization (DAO). A new assemblage. The Hood note is the first example of what more we can do. A glimpse of what more we can become.

'Robin Hood Services' (RHS) is our new holding company, registered as a benefit corporation in Nevada. It is a first generation CPE. This comprises the second part of our funding mechanism, and facilitates the development of our new assemblage in three ways. First, RHS effectively compartmentalizes Robin Hood's ongoing developmental risks so as to eliminate any domino effect or otherwise exogenous risks, and in turn secures the possibility for continual creations of new, member-driven autonomous operations and services. Second, by now simulating and leveraging certain organizational upsides of the now prevailing startup-up structure, we will be able to secure the funding and other development resources required for the successful implementation of Robin Hood 2.0., beginning with the Hood Note. For instance, our Robin Hood 2.0 development team will earn a salary, receive shares, warrants on those shares, and will otherwise be materially vested-in and remunerated-by our joint success. Our immediate aim is to raise initial development money – and then further development money over the course of

four years, after which the total surplus value created will be equitably distributed amongst Robin Hood denizens, for example in the manner of an initial crowd offering. This structure will also better allow for micro-contributions, bounties, and terminable short-term commitments by varieties of operators. Third, the structure of a 'benefit corporation' provides Robin Hood with an efficient investing portal into Robin Hood projects, and the further development of distributed autonomous applications.

'Hood Fairs' will cause our member base to grow, and will also facilitate our ongoing progressive differentiation towards a decentralized autonomous organization (DAO). Hood Fairs are bi-annual gatherings (a new form of co-op member meeting), venues convened for and sponsored by the Robin Hood commons, which exhibit goodserv booths, artisan, art, and architectural workshops, seminars, and panels composed of Robin Hood members, interested parties, and sister affiliates, with varieties of commons-building activities. They will be convened online and at a physical location for a set period of time, each summer and winter, beginning with the 1st Hood Fair, scheduled for winter 2016.

'Hood Offices' will continue to serve as itinerant spaces for our research and development work, and entry points to the organization (throughout the year).

Phase Two. This involves the development mechanisms of n number of distributed applications (Dapps). Our research and development team is engineering the first such application, which involves a peer-to-peer distributed interface for writing and reading exotic options (discussed in brief below). However, we enjoin, and will be sponsoring facilitation of, broad denizen involvement in the creation and implementation of a multiplicity of other such Dapps. A second Dapp currently under development is a 'white label' application, in the form of a Robin Hood-powered hedge fund engine – 'Robin Hood inside' – whose purposes is to activate autonomously branded personal hedge funds, which for example 'short' certain companies that are at the same time attacked through boycott campaigns.

In summary:

The first Dapp is an online platform for operators to write and issue exotic options. Its purpose is to facilitate the autonomous self-organization of couplings of operators, clustered into n -dimensional networks, who are perpetually creating, distributing, and exercising new optionalities amongst themselves. We call this Dapp the 'CEO' – 'Clusters of Exotic Options'. The geometric structures of such clusters are fractaled and topological, and thus the CEO seeks to promulgate one of a number of new models for rhizomatic modes of economic assemblage.

The CEO is only one such Dapp. The general development purposes of Phase Two is to initiate the next step towards effectuating a fluid, flexible assemblage, from which a heterogeneity of autonomous Dapps will be developed by Robin Hood's denizens, as we individually and collectively move towards becoming operators – operators of an n number of n -dimensional

distributed applications, englobed within a decentralized autonomous and autonomously-creating organization.

A more in depth discussion of these two phases follows below.

Phase One

Robin Hood Services. A Robin Hood start up

Robin Hood Services is a first generation startup simulation, whose surplus value will be distributed amongst the operators taking part in its creation. It has been legally-established in Nevada. Negotiations for securing funding for the development of Robin Hood 2.0 have already commenced. The Robin Hood 2.0 White Paper will be released in August 2015. And we expect to have secured our initial seed funding by early fall 2015. Robin Hood Services is a first generation common purpose entity (CPE).

Hood Notes. A first generation collateralized equity note

At our winter 2016 *Hood Fair*, Robin Hood will issue €20 million of collateralized equity notes, called 'Hood notes'.

Consistent with the business model of the hedge fund component of Robin Hood 1.0:

- a. All investment monies from note issuance will be turned over to the Parasite for investment.
- b. Note holders are purchasing exposure to the risks and returns generated by the underlying basket of assets in the Robin Hood Minor Asset portfolio.
- c. Note holders, as denizens of Robin Hood, will continue to design, propose, vote-on, and execute mutual equity programs with all shared proceeds.

However, the principal difference between the share model of Robin Hood 1.0 and the Hood note model of Robin Hood 2.0 lies with the latter's increased *variability, augmented fungibility, and multidimensional functions*.

Variability. To begin with, Hood notes now come in 3 varieties: there are 'Seniors', 'Flats', and 'Super-equity' notes; any of which, and any amount of which, may be purchased by Robin Hood denizens; and are backed by assets in the Robin Hood Minor Asset portfolio. The principal difference is, now their risks and returns have been tranced.

Let us consider an example of how this will work.

Example

Let us suppose Robin Hood is composed of only 3 members, who have each purchased and hold one €50 Hood note. The notional value of each of the three notes are equally-tied to the basket of underlying assets in the Robin Hood Minor Asset portfolio. But in the tranced model, their

respective risks and returns correlate to their respective tranche, which means each of the three different classes of notes experience different percentages of gains/losses.

If each of the 3 members have invested €50 at T_0 , this means there is €150 in the RH portfolio at T_0 . The percentages of gains/losses will be distributed accordingly:

(€50) Tranche 1 notes are Seniors	» experience 50% of gains/losses
(€50) Tranche 2 notes are Flats	» experience 100% of gains/losses
(€50) Tranche 3 notes are Super-equity	» experience 150% of gains/losses

Let us consider two different scenarios to this example.⁴

Scenario 1. The value of the portfolio at T_0 was €150. The value of the portfolio at T_1 is €200, which means the value of the portfolio has grown by €50. How does this affect the three different notes?

The Senior note experiences +€8.33 gain.

The Flat note experiences a +€16.66 gain.

The Super-equity note experiences a +€24.99 gain.

Scenario 2. The value of the portfolio at T_0 was €150. The value of the portfolio at T_1 is €100, which means the value of the portfolio has dropped by €50. How does this affect the three different notes?

The Senior note experiences -€8.33 loss.

The Flat note experiences a -€16.66 loss.

The Super-equity note experiences a -€24.99 loss.

These two scenarios illustrate that the largest gains/losses fall on Super-equity notes, since their tranche is leveraged by notes in the Senior tranche. In return, the smallest gains/losses fall on notes in the Senior tranche, since notes in the Super-equity tranche provide equity enhancement to notes in the Senior tranche. The Flats retain the 1-to-1 gain/loss ratio, consistent with Robin Hood's 1.0 share model.

Fungibility. Generally speaking, in finance, collateralized notes are new assets created by the pooling and tranching process of securitization. Such process allows for the dedifferentiation and redifferentiation of risks and returns in the new assets (notes) created therein – and at that, flexibly and fungibly, and precisely as its operators may choose.

⁴ For purposes of arithmetic simplicity, we have excluded any shared distributions, costs, and other involved expenses.

Common financial practice is to ‘collateralize’ such notes with debt. This means the risks and returns from such notes are ‘backed’ by debt assets, and in turn the notes themselves are typically issued as debt. For example, notes linked to mortgage-backed securities (MBS) are backed by mortgage loans; notes linked to corporate bonds obligations (CBOs) are backed by bonds; and notes linked to collateralized loan obligations (CLOs) are linked to student loans, credit card loans, and so on.

Debt, however, is both an inferior form of finance, and a form of social organization to which Robin Hood is aesthetically, politically, and philosophically opposed. Or at least we believe that modes of economic organization that pivot on flexible combinations of personal and common equity are aesthetically, politically, organizationally and economically superior.

For this reason, our R&D team has engineered a Hood note, which we label a ‘first generation collateralized equity note’ –precisely because it’s the first of its kind. CENs are collateralized notes, but which are no longer collateralized by debt, nor issued as debt. Rather, Hood notes are collateralized by equity, the shared equity of the Minor Asset portfolio, and in turn are created by securitizing the risks and returns on that equity - which, we remind you, replicate and exploit the emerging consensus action of the best investors in the market.

Let us survey Figure A, to better visualize Hood notes, and examine some of its key ontological features. [Figure A]

- a. We see that the underlying basket of securities is the Robin Hood Minor Asset portfolio.
- b. Denizens may purchase any amount of any of the three classes of Hood notes, which are collateralized by the Robin Hood Minor Asset portfolio, but whose risks and returns are now tranching, as discussed above.
- c. Also discussed above, as gains/losses are experienced by the portfolio, they’re distributed in cascading flows to the notes in their correlative tranches.

One observation is that this now illustrates that securitization, by pooling and tranching the total risks and returns of the underlying basket of assets, provides its operators with a fungible technology for the dedifferentiation and redifferentiation of risk and return, exactly as they need or wish it to be: it’s merely up to its operators to discuss, deliberate over, and autonomously decide on its arrangement and manner of distribution.

Another observation presents itself in form of a question, namely: Who, exactly, can be said to ‘own’ the underlying assets – the individuated risks and returns, which have now been pooled (dedifferentiated) and tranching (redifferentiated), as if sliced by Robin Hood into as many pieces as there are notes, and now held by its denizens? The answer is clear: all of the Hood note holders do, which is to say the denizens of Robin Hood equitably (but not equally) share the risks and returns in common.

In this respect, we see that the securitization is, yes, a technology for the fungible distribution of risk and return. But we also now see that it is a technology organically fitted for the distribution of common equity, with a built-in distributive, self-autonomous governance capacity to boot.

Multidimensionality. The principal benefit of Hood notes are their multidimensional function as both a funding and development mechanism.

Hood notes are a funding mechanism, insofar as they cause the growth of common *equity*, by growing our AUM to €20 million and beyond. But Hood notes also serve as a development mechanism, in that they facilitate the creation and distribution of new *options*, they'll cause our co-op member base to grow, and will thus enable a progressive clearing for new modes of *assemblage*.

For example, by offering three classes of notes, our denizens now have the option of tailoring their risk-return profile to their risk-return needs and desires. Their shared equity is held in common, but it is not homogeneous; all returns are distributed equitably, but not equally; there is security and visibility, but the pistons of difference will continue to pump-away. Also, eventually, we intend and expect that Hood notes will ultimately function as a digitally-distributed money market instrument, for example by obtaining an additional capacity to be posted as collateral on a future blockchain money market, as our DAO develops repo- and other money market capabilities. This will provide denizens with additional use-values for their Hood notes.

Add blockchain. Encoding issued Hood notes as blockchain-based smart contracts will augment this multidimensionality and optionality. It will distribute a broader basin of attraction for members, or even 'mere' customers, to become autonomous operators. For a blockchain is a decentralized, non-hierarchical, non-signifying cooperative system, without any need of symbiosis, community, shared goal, nor any central organizing memory, and is thus only defined by a circulation of states. We believe it makes possible the n-1 horizontal propulsions of rhizomatic organization. Now, by integrating the hyperfungible distributive and organizational technologies of structured and synthetic finance, we believe we can self-operate into the blockchain new economic attractors, or refrains, to actualize precisely this mode of cooperation and organization. We wager that these attractors will no longer effectuate creditor-debtor relationships, but now activate free-action over work, thus eliminating those endogeneous, ostensible necessities for selling one's labor power, the putative vicious competition amongst ourselves, or any game theoretical device predicated egoism and opportunism. Rather, enfolded within our reengineered fusion of these technologies we now glimpse an image of an open wealth of economic space, chocked-full of new and different options, resources, riches, mutually-shared equity, and an absolute stake in and about our future.

Phase Two

Distributed Applications

The geometry of a blockchain belies those other models of economy predicated on rigid Euclidean motions, and other conservative concepts, such as additivity, linearity, equilibrium, growth of volume (e.g. GDP), and other self-limiting system invariance requirements. Proliferations of distributed applications on a blockchain, by contrast, activate topological motions, and other dissipative concepts, such as nonlinearity, phase singularities, strange attractors, and other elements endemic to systems marked by dynamics whose states crouch poised at far-from-equilibrium. For example, already the fractaled clusters actualized by Robin Hood's first Dapp, the CEO, comprise couplings of operators constantly making, unmaking, and remaking their fluid substance on a moving horizon of crowned anarchies. They repose on n-dimensional degrees of freedom, irregular hierarchies, asymmetries, and interminable deterritorializations, which operate high-order nonlinearities – such operations amount to nothing less than a submission to, effectuation of, and commingling with deterministic chaos.

The disposition of Robin Hood 2.0 involves a wager on the superior aesthetics of worlds of distributed applications (Dapps) englobed within decentralized autonomous organizations (DAO). Its possibilities are actualized by blockchain technology, and in particular the infinite degrees of freedom its topological motions endow its operators, when fused with the hyperfungible financial technologies of financial derivatives, synthetic and structured finance.

For this reason, the chief operator of our decentralized autonomous organization is the CEO.

Dapp 1. Clusters of Exotic Options (the CEO)

In life, everyone wants options. For this reason, Robin Hood's R&D team is engineering a Dapp to facilitate the peer-to-peer writing and reading of exotic options. We call this Dapp the CEO. We intend that it will be ready for use no later than summer 2016.

Let us consider one example of how the CEO will work.

Example

Observe the case of Channing and Serra.

Channing and Serra (C&S) believe they have a good idea for an art project, some start-up goodserv, a research project, or for anything else they want to do. The point is they have a notion to do a project.

The first thing C&S must do is publicize their project's existence. Because C&S are denizens, they have access to the blockchain. So they do this by registering their project's name and product with some Dapp, whose protocol is a distributed name registration database (a kind of Namecoin-equivalent), where any first-to-file registrants who wish to start-up some project can go to register their project's name and product.

C&S register their project on this Dapp. Their project has now been made public on the blockchain. C&S are now operators.

The next thing C&S want to do is fund their project. They need to raise some funding to get things going. They need finance. Generic finance is comprised of debt and equity; and today, the most common method of finance is debt: for C&S, this would amount to 'taking out' a loan, or some other form of debt (e.g. a bond, a debt note, some commercial paper). But they're reluctant to 'go into' debt, since they know this indefinitely indebts their project's unknown future market value to its present notional value, which is currently at zero.

The other common method of financing is to 'issue' equity, so this is what they want to do. But C&S probably cannot issue stock in project that doesn't yet exist; but even if they could, they don't want a set of sedentary shareholders extracting the future surplus from either their project's aesthetic, or if its a goodserv, its net profits; but would rather prefer to enfranchise stakeholders working with them, towards operating the mutual, shared success of their common venture – which is, namely, the art or goodserv project itself. This means that C&S are both aesthetically- and philosophically-disinclined to issue stock, so they will not be selling stock in their project at this time.

What else can they do? How can they fund their project's start-up costs?

The answer is, C&S will log-on to the CEO Dapp, and begin writing and selling exotic options. And they will use the cash from the sale of exotics to fund the start-up of their art project/goodserv.

Writing Optionality. Exotic options are a second generation class of options. Options comprise a class of financial derivatives. Financial derivatives comprise a class of financial assets. Financial assets are commodities that can be bought and sold like anything else. The difference, however, is that anyone can write an option *ex nihilo* into existence without having to first own anything whatsoever. To write and sell an option is simply to *create* and sell for a fee some optionality to someone else; and to buy and hold an option gives its holder optionality.

There are two kinds of options, call options and put options.

Holding a 'call option' gives one the right to acquire something for a certain pre-agreed to price (called the 'strike price' K), on or by a future date (called 'maturity' or 'expiration').

Holding a 'put option' gives one the right to part with something for a strike price K on or by expiration.

Common financial markets practice is such that this 'something' which the call/put holder has bought the right to acquire/part-with is a stock, or some other standardized financial asset. The CEO will include this notion, but also broaden its scope of possible objects so as to include *anything* produced by an art or research project, or some goodserv.

We have said C&S are going to fund their start-up by writing and selling exotic options. They are therefore persons who 'operator' optionality. They're writing optionality. They're creating optionality *ex nihilo* and potentially *ad infinitum* (though this latter phrase, of course, is just a manner of speaking).

Operators are persons who write and sell, and buy and read options. Operators trade optionality. An operator will therefore need to keep a 'book', which houses her total portfolio of assets and liabilities: it will contain options which are written and sold (liabilities) and options which are held and may be read (assets), as well as any synthetic assets, cash-currencies, and any referent assets. The contents of an operator's book are stored at a digital address, which is secured and managed by a smart contract on blockchain.

There are two types of operators, writers and readers; and thus there are two types of operations, writing and reading.

To *write* optionality is to compose and issue an option for a premium price to a reader, who now holds the right to choose to acquire some pre-agreed to asset A, whether an object, amount, or service, at a predetermined price K, if mutually pre-agreed-to conditions are met at maturity and/or during the life of the option.

To *read* optionality is to acquire an option for a premium price from a writer, who now accepts liability to deliver some pre-agreed to asset A, whether an object, amount, or service, at a predetermined price to the reader, if mutually pre-agreed-to conditions are met at maturity and/or during the life of the option.

For this reason we can see that writers issue optionality for a fee (premium), and accept liability if conditions written into the option contract are met. And readers accept optionality, and pay a fee (premium) for the right to read optionality, thus exercising their optionality if conditions written into the option contract are met. We label the premium price of a call option C, and the premium price of a put option P.

The state of having options is called optionality. Options are a financial technology for *creating* and selling optionality. The CEO facilitates that operators on a blockchain can now write and read options, and constantly read and write optionalities anew. However, options traders also denote optionality as nonlinearity. Because options are nonlinear assets, operators who operate optionality are creating (writing) accepting (reading), or trading nonlinearity. In a linear system, the total effect of the combined action of two or more operations is merely the additive

superposition of the effects of each operation individually. In a nonlinear system, the combined effect of two or more elementary operations can induce dramatic effects, disposing the system of new solutions whose availability were previously latent or unactualized.

What we have just said equally applies to exotic options or vanilla options; these are the two classes of options.

Vanillas are standardized, and conventionally-structured. They are nonlinear, but of a lower-order nonlinearity than exotics.

It is true that today 'anyone' can trade vanilla options, even without recourse to a blockchain, smart contracts, or the CEO Dapp. For example, today if you were to register (for a fee) in order to apply (for a fee) for an options account (on which you pay a fee) to begin trading options (for a fee) on one of the many options brokerage houses, you will most likely only be buying and selling vanilla options (for a fee), and will not have the opportunity to write or read exotics (or if you *are* able to, there's a big fee you're charged).

Exotics, by contrast, are bespoke, customizable, and have unconventional structures. They are of high-order nonlinearity.

When brokered by the CEO, and thus encoded as an interminable series of smart contracts on a blockchain, there are little-to-no costs for anyone to begin writing and reading options. Moreover, the digital economic space of the CEO is immediately a distributed economic space, with a self-authenticating, secure public ledger, which is nothing less than, but also much more than, a decentralized autonomous space for economic transactions that is presently known and defined as a 'market'. This market, however, is a multiplicity, and its multiplicity is rhizomatic.

We know that high-order nonlinearity effectuates deterministic chaos, and its model of economy is that of a rhizome. For this reason, couplings of operators who operate high-order nonlinearity are creating, submitting to, and commingling with deterministic chaos.

Exotics options on blockchain. Clusters of exotic options on a blockchain are n-dimensional fractals, facilitated by use of smart contracts. Let us then briefly examine these two terms, 'smart contracts' and 'blockchain', prior to examining their use-value for C&S's attempt to fund their start-up without indebting themselves, but rather now by writing and selling optionality on their start-up's future value, whether artistic, economic, scientific, and so on.

The most general acceptable definition of a *smart contract* is a user-agreed-to customizable rule or set of rules which governs case-specific interactions of the users of a blockchain. These interactions, like all interactions in life, produce and are comprised of arbitrary data. The most general acceptable definition of a *blockchain* is a digitally-distributed space for the time-stamped storage of arbitrary data. Like many profound technologies, both of these appear remarkably

simple, and in truth they are: the ‘arbitrary data’ stored on a blockchain could be the content and terms of an economic transaction between two or more parties, the amount of money in an account, the results of casting and tallying votes, or any other arbitrary data one might imagine, or that two or more people might produce, or require to govern their interactions.

However, when the distributed technology of a blockchain is combined with the hyperflexible, fully-customizable technology of smart contracts, all of the blockchain’s operators are immediately equipped with an interminable, modifiable, secure mechanism to convene, deliberate, vote, and implement agreed-to rules and permissions to create and modify data, through a set of self-administering and self-executing scripts. These scripts can literally be anything, their potential is unbounded: any user-agreed-to consensus or security rules can be used to manage the blockchain. Once they’re written and agreed to, the scripts are then time-stamped, executed, and publicly registered on the blockchain. And they can also include possibility of later modification. They are smart contracts.

So how do C&S and their prospective equity partners use smart contracts on a blockchain? They use the CEO to write and sell exotics.

There are many different types of exotic options, and many more to discover still. But immediately, there are few that C&S know they want to begin writing and selling. The first exotic C&S notify prospective investors they’re willing to write is the following:

Example 1. Compound Options

Compound options are options on options. They are ‘compoundings’ of risky and therefore relatively inexpensive options within which are embedded one or more comparatively more expensive and ideally less risky options.

For instance, if investor R buys a call option *on* a call option on C&S’s project, R has bought for the premium price of C_1 the right to pay the first strike price K_1 by the first exercise date T_1 , in order to receive a second call option C_2 , which then gives R the right to buy some referent asset A, which C&S and R have agreed to ahead of time (and which is written into the terms of the contract) for the second strike price K_2 , by the exercise date T_2 . What is this reference asset? Maybe it’s a product, or a service, or an object, or performance, but at any rate which C&S generate with R’s start-up funding. Maybe it is a possibility of participation. Maybe it’s a share of their art project’s, or goodserv’s value. Maybe it’s another call option. Maybe it’s a put option. Maybe its cash, which C&S’s art project or goodserv will eventually generate. – But this is the point: it can be anything C&S and R have agreed to as the option’s referent. There are lots of options all around.

Why would C&S want to write and sell a compound option?

First off, C&S need some fast seed money to give them a chance to pay for their initial start-up costs. By writing and selling a call on a call to R (and other R's on the blockchain), C&S acquire some immediate start-up funding, earned from the premium price of the option C_1 . If, after T_0 , C&S change their project or business model, if can't get their act together, or if they suffer some set-back between T_0 and T_1 , it's likely R will not exercise the option for the premium price K_1 . On the one hand, C&S will be sorry to see R not exercise the C_1 option by its expiration at T_1 , since this means they'll now be lacking, and will thus once more be in search of, this time second-stage funding, which they would've otherwise acquired had R been willing to exercise her C_1 call option at the price of K_1 . But on the other hand, C&S owe nothing to R in return. They can walk away debt-free. They owe nothing to no one. They can try something else sometime in the future. However, if C&S make good use of the funding they acquire by selling C_1 to R; and if R sees this; it's likely that R will either exercise C_1 for the additional price of K_1 , which now gives R the C_2 right to buy some reference asset A for some additional price C&S and R had agreed to ahead of time; or R could also sell C_1 before T_1 to some other R, who will exercise C_1 for the price of K_1 . C&S are probably ambivalent as to which of these occurs, since either way they're provided with additional start-up funding.

Why would R want to buy a compound option from C&S?

R has familiarized herself with C&S's proof of concept, and either really likes their project proposal, or at least believes it deserves a chance to succeed or fail on its own merits. But R doesn't know what the future holds for C&S's project: it could be the next 'big thing', or it could prove unviable and quickly fail. R does not want to lose too much money when taking a risk on C&S's start-up, but R *does* want the option to invest in C&S's start-up now, and possibly even increase her investment in it sometime in the future. And after all, if C&S's project turns out to be worth it, shouldn't R be reasonably remunerated for believing-in and investing-in C&S's start-up when no one else would?

By buying from C&S a relatively inexpensive call on a call for the premium price of C_1 , on the one hand, R will not lose more than the initial premium price of C_1 , since if by T_1 R is dissatisfied with the progress of C&S's project, R simply lets the option expire unexercised, or possibly even tries to sell the option to someone else before T_1 to try to recover as much of the C_1 money has possible. But on the other hand, when at T_0 R pays the initial premium price C_1 , R is also acquiring the option to either exercise the option by T_1 for K_1 , in order to now pay a new (and inevitably more expensive) premium price C_2 to acquire the new (and more valuable) right to exercise the new call option C_2 at T_2 for K_2 . Or once again, R could also sell her C_1 option to someone else now for a profit, and simply walk away. If C&S's project begins to experience some success, or if R is otherwise satisfied with its progress, R is remunerated for the early risk she's taken. But if C&S's start-up does not succeed, R has not lost very much money. R is not broke. R is not disillusioned. R can invest in something else sometime in the future.

We see that a compound option allows both C&S and R, as equity partners, to tailor their contract so as to mutually and equitably benefit from the success of their venture. First, they are now mutually invested in each other's material well-being. Second, it gives both parties some optionality. R is invested in C&S's success, yes, but need not go broke wagering on their project's success. Likewise, C&S are grateful for R's early support, and are happy to reasonably remunerate R for wagering on the future success of their project when no one else would; but in no way are C&S's prospective future interminably indebted to R.

However, compound options are only one of many options C&S may wish to write and sell. They could also write forward start options, chooser options, or barrier options, and there are many other exotic options as well, both known and yet to be discovered. Let us briefly consider a few known exotics in closing our example.

Example 2. Forward Start Options

Forward start options are options that will start at some time in the future. The nature of C&S's art project/goodserv may be such that it will take some time to begin monetarily, or otherwise, demonstrating its progress. By writing a forward start option, C&S can write and issue an option to fund the initial stages of their venture, without being compelled to immediately produce any nominal value. And R can hold this option without its value experiencing 'time-decay' (theta) as the date of its expiration nears. Forward start options give its writers an augmented power to stall, slow, fold, or twist time, i.e. time's relation to value.

Example 3. Chooser Options

C&S could also write chooser options. After a specific period of time, the holder of a chooser option can 'choose' whether their option is a put or a call. Chooser options are powerful economic attractors.

Example 4. Barrier Options

C&S may need to hire employees in order for their art project/goodserv to succeed, but for whatever reason may not want to hire employees by issuing chooser options. C&S could instead pay their prospective employees with barrier options. The payoff on barrier options depends on whether the referent reaches some pre-defined price point during a set period of time. This is a method of equitably-enfranchising those who may want to work with C&S towards the common success of their project: if they do good work, they will be remunerated by the rise in value of their option; if they do not do good work, the value of their option will fall.

No later than summer 2016, C&S can do all of this by downloading for free Robin Hood's CEO Dapp on their smartphones or computers, which allows them to both advertise and customize the writing and selling of any of these four types of exotic options. Any liquid market for any asset class will ultimately reduce transaction costs for both parties, and improve its market stability. But already from the beginning, if these exotic options are executed by the CEO Dapp, written as

smart contracts, and transacted on a blockchain, there is no reason for there to be anything but the most marginal of costs even from the outset.

Part III. Concepts

Address

Every operator has one or more digital addresses, attached to their public key, which holds the contents of their book.

Affects

Affects are less so dispositions or states, than they are those parameters whose critical values mediate transitions from one state to the next.

Artificial Leverage

Artificial leverage involves the interiorization of exogenous debt, for purposes of augmenting the volume and speed of gains and losses. Artificial leverage is qualitatively different from natural leverage, insofar as it is artificially-assumed, incorporated, and deployed in a generic financial exchange. Most variants of artificial leverage permit an asset's value to fall below zero value.

Attractors

Attractors give pathology to affects. From dynamical systems theory we know there are two kinds of attractors: regular attractors and strange attractors, the latter of which characterize systems whose dynamics are defined as deterministic chaos.

Bitcoin

Bitcoin is a digital currency used to effectuate the bitcoin protocol. The bitcoin protocol initiated the first wave of blockchain technology.

Blockchain

A blockchain is a time-stamped, digitally-distributed public ledger, equipped with autonomous self-governance and n-dimensional peer-to-peer capabilities.

Book

Every CEO operator runs a book, which comprises the total assets in her portfolio. Operators continuously recalibrate their books, through dynamic hedging-speculating-arbitraging.

Clusters of Exotic Options (CEO)

Operators reading and writing exotic options cluster together in n-dimensional, terminable or interminable permutations, perpetually making, unmaking, and remaking their nonorientable

economic surface along a moving horizon. Their fluid, asymmetrical geometric structure is topological and fractal.

Collateral

Collateralization involves the placement of assets to secure debt or equity. Collateral are the assets backing such financial exchanges.

Collateralized Equity Note (CEN)

CENs are structured financial notes, whose value is backed by the basket of assets comprising a portfolio of equity. Hood notes are a first generation CEN.

Continuous Recalibration

Operators dynamically replicate their books. To dynamically replicate a book is to recalibrate its contents. An operator who continuously recalibrates commingles with deterministic chaos.

Copoiesis

Copoiesis (cf. autopoiesis) is the creative aesthetic and ethical potential emerging out of borderlinking and metamorphous individuation and intertwining. It is means becoming-together-separate without any need for symbiosis or becoming other.

Debt

Debt and equity comprise the two subclasses of generic finance. Debt is an inferior form of financial exchange, and should be avoided whenever possible.

Decentralized Autonomous Organization (DAO)

A DAO is an n-dimensional, distributed, rhizomatic set of operators, who autonomously arrange their own attractors.

Denizen

Denizens hold 'Hood notes'. Not all denizens are operators.

Deterministic chaos

In deterministic-chaotic systems, stochastization and causal determinism cohabit and abide. Deterministic chaos is marked by high-order nonlinearity. A rhizome model of economy effectuates and is effectuated by high-order nonlinearity. Operators operating a rhizome model of economy commingle with and as deterministic chaos.

Distribution

There are two qualitatively different modes of economic distribution. There is sedentary distribution, and there is nomadic distribution.

Equity

Debt and equity comprise the two subclasses of generic finance. Equity is a superior form of financial exchange, among other reasons, because it tends to dedifferentiate egoism and altruism amongst the parties to the exchange.

Equity Enhancement

Super-equity notes leverage Senior notes to augment their volume and speed of gains/losses, and in turn provide equity enhancement to Senior notes. They provide one example of natural leverage.

Eris Industries

Eris has developed an open source Distributed Application software stack and application server, called the Decerver, which will likely be used to implement Robin Hood's first Dapp, the CEO.

Ethereum

Ethereum is currently the nascent paradigm for second generation blockchain technology.

Exotic options

Exotic options, or simply 'exotics', comprise a class of bespoke financial derivatives, which give its holder the right but not the obligation to exercise the option upon occurrence(s) of some contingent event(s) written into the terms of the option itself. There are many different types of exotics, and many more yet to discover.

Fractals

Fractal geometry, along with topology, is the geometry of deterministic chaos. Fractals denotes a fragmented, fracture, intractable irregularity. Clusters of exotic options comprise fractal geometric structures.

Generic finance

Generic finance is a class of exchange comprised of two subclasses of assets: debt and equity.

Goodserv

This hyphenation is a neologism used to denote the broadest possible conception of 'goods and services'.

Hood Notes

Hood notes are a first generation collateralized equity note (CEN), whose value is backed by the Minor Asset portfolio. There are three classes of Hood notes: Seniors, Flats, and Super-equity. They deploy a primitive amount of natural leverage.

Leverage

Leverage is the acquisition and deployment of debt in order to augment the volume of gains and losses. There are two kinds of leverage: artificial and natural leverage.

Linearity

In a linear system, the total effect of the combined action of two or more operations is merely the additive superposition of the effects of each operation individually.

n-1

n-1 refers to a necessity to create new organizational ideas and forms – to which any “One” (Leader, Value, Community, Idea, Principle, Memory...) belongs only as subtracted. How is multiple made, how is it defended from continuously arising “ones”, how does multiplicity organize without any one, with no common task, aim or purpose?

Natural Leverage

Natural leverage, also sometimes called embedded leverage, involves the exteriorization of endogenous debt, for purposes of augmenting the volume and speed of gains and losses. Natural leverage is qualitatively different from artificial leverage, insofar as it is ‘natural’, viz. organic, to a financial exchange. Unlike artificial leverage, natural leverage does not permit an asset’s value to fall below zero value.

Nomadic Distribution

Nomadic distribution is the distribution of economic space. It differs from sedentary distribution, which involves the redistribution of preproduced objects in a predistributed space.

Nonlinearity

In a nonlinear system, the combined effect of two or more elementary operations can induce dramatic effects, disposing the system of new solutions whose availability were previously latent or unactualized.

Operators

Operators operate distributed applications. Operators keep (run) a book. Operators speculate-arbitrage-hedge. Operators cluster together into n-dimensional, small, mobile, terminable and interminable quantities. All operators are also denizens.

Options

See Exotic options.

Refrain

“Tra la la, as a child would hum...calling for the power of the cosmos”. Refrain is an attractor, an organizer, of the process of entrance into or exit from an existential territory. It creates

beginnings of consistency in chaos, like a child humming in the dark. It is repeatable, made of rhythms and milieus, and can be a territorializing or deterritorializing force.

Rhizome (model of economy)

A rhizome is a distributed, n-dimensional, decentralized model of economy. A rhizome model of economy is perpetually actualized by the operators of a decentralized autonomous organization.

Robin Hood Services

Robin Hood Services is Robin Hood's holding company, registered as a benefit corporation in Nevada. It facilitates the development of our new assemblage in three ways: (i) compartmentalizes risks (to secure the possibility for continual creations of new autonomous operations and services); (ii) secures development resources for Robin Hood z.o.; (iii) actuates an investing portal into other distributed applications. It is a first generation common purpose entity (CPE).

Securitization

Securitization is a type of structured finance. There are many different methods of securitization, but all instances involve the process of pooling and tranching, or, dedifferentiating and redifferentiating risks and cash flows of existing assets (whether generic or synthetic). In all cases an existing asset is divided and repeated, producing a new change in kind –which is called the 'security'.

Security

A security is the financial asset created in the process of securitization. Asset-backed notes are securities. A collateralized equity note (CEN) is one such type of security.

Sedentary Distribution

Sedentary distribution is the redistribution of reproduced objects in a pre-distributed space. It differs from nomadic distribution, which involves the distribution of economic space itself.

Smart Contract

Smart contracts are user-agreed-to customizable rules or set of rules which governs case-specific interactions of operators of a blockchain. These interactions, like all interactions in life, produce and are comprised of arbitrary data.

Synthetic finance

Synthetic finance is a class of exchange which allows for the fungible distribution of risk and cash flow. Synthetic financial exchange either involves the extraction and redistribution of one or more economic properties from an existing asset, or for the replication and creation ex nihilo of a new asset, with new economic properties unto itself.

Topology

Topological motions consist of bending, stretching, folding, and twisting over. Economic transformations, or classes of exchange, comprised of topological motions exhibit far fewer invariance requirements than those governed by Euclidean motions. Subsequently, synthetic financial exchanges exhibit a topological fungibility.

Tranches

Securitization involves the process of pooling (dedifferentiating) and tranching (redifferentiating) risk and cash flow. Tranches have attachment and detachment points, which allow for the creation and distribution of natural leverage, equity enhancement, and collateralization.

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