From: "jeffrey E." <jeevacation@gmail.com>
To: Ben Goertzel <[redacted]>
Subject: Re: MUSIC and MIND ... Fwd: quick question -- AGI-16 snacks and reception sponsorship?
Date: Tue, 19 Jul 2016 14:08:16 +0000

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good try , but misses any biology, it is a shape in sound space , that needs to be coherent under cerain inherent constraints. the line theory and the haromic theory , relate to colors in paintings, it is in my words a representation of a MOBJECT . my mental objects. , they have context shape projections and time. more later

On Tue, Jul 19, 2016 at 10:02 AM, Ben Goertzel <[redacted]> wrote:

> Hah ... no, I haven't taken any drugs since April in Las Vegas ;) ...
>
> This variety of music theory looks interesting ("Westergaardian"), but
> I haven't studied it deeply yet
>
> https://mathemusicality.wordpress.com/category/westergaardian-theory/
>
> Indeed a jingle has a great amount of emergent pattern involved --
> both between its various sub-patterns, and between its sub-patterns
> and other patterns in the assumed musical history and context of the
> listener ...
>
> Joscha and I look forward to seeing you Thursday, and yes, we will
> bring a few AI researcher friends along.
>
> -- Ben
>
> On Sun, Jul 17, 2016 at 6:26 PM, jeffrey E. <jeevacation@gmail.com> wrote:
> > you must be on drugs. .. . that being said , interesting views. but
> > again, lets start at what makes a tune or melody. it is a difficult
> > question. and my music friends say a jingle is one of the most
> > sohisticated of sounds. . immediatley pleasurable. bring up to 8
> > others on thurs, i will have a blckboard.
> >
> > On Sun, Jul 17, 2016 at 4:35 PM, Ben Goertzel <[redacted]> wrote:
> >>
> >> Looking forward to discussing AGI with you and a few others on the 21st
> >> ;-)
> >>
> >> In the meantime, semi-relevantly, I thought some more about
> >> surprisingness, pattern, music, etc....
> >>
> >> Musing about how musical psychology relates to the psychology of other
> >> human activities, I started musing about the role of unpredictable
> >> timing in sexual arousal …
> >>
> >> In the pre-orgasm phase, extremely regular and predictable movements
> >> are great, as long as they're the right movements
> >>
> >> But in the earlier phase, where arousal is still being built up,

>> random variations in timing are desirable. That is, a specific
>> pleasurable motion every 5 seconds is worse than the same pleasurable
>> motion delivered with a MEAN interval of 5 seconds but random
>> variation of, say, 2 seconds variance on either side. My suspicion is
>> that this is true if the movements are delivered by a purely automated
>> tool, but even more true if the movements are delivered by an agent
>> that has emotions or is perceived to have emotions.
>>
>> What is this all about?
>>
>> To understand this we have to understand that human pleasure has at
>> least three aspects:
>>
>> · Raw underlying pleasure
>>
>> · Comparison of pleasure to immediately-past pleasure
>>
>> · Comparison of pleasure to (e.g. cognitively) expected pleasure
>>
>>
>> So, considering the scenario above (building arousal via the tension
>> induced from random timing variations in pleasure), when the pleasure
>> comes a few seconds early, then one is getting MORE THAN EXPECTED,
>> right? That's pretty exciting! One expected to get goodies after 5
>> seconds, but instead one got them after 3 – woo hoo! As our
>> excitement is often proportional to the difference between what's
>> expected and what's obtained, getting goodies at 3 seconds when one
>> only expected them at 5 seconds is GOOD – assuming that one is
>> time-discounting reward, so that rewards occurring sooner are, by some
>> factor, better.
>>
>> But what about when the pleasure comes a few seconds later? Well, by
>> the time 7 seconds have rolled around, one is feeling pretty eager and
>> disappointed and frustrated. After all, the pleasure was supposed to
>> come at 5 seconds, right?! But wait a moment – that makes it all the
>> more pleasurable when it comes along after 7 seconds! The pleasure
>> is not just delivering pleasure, it's delivering relief from
>> frustration. Because we derive excitement from the contrast of what
>> we get with what we HAVE, as well as from the contrast of what we get
>> with what we expected. And because the disappearance of pain (or even
>> the shift between different kinds of pain) can bring its own kind of
>> pleasure.
>>
>> But if the goodies predictably came after 3 seconds, or after 7
>> seconds, then expectations would just get recalibrated – and the new
>> "on time" would be 3 or 7 seconds instead of 5. If 3 seconds is
>> what's expected, then 3 seconds isn't excitingly soon anymore – 1
>> second is excitingly soon … and 7 seconds isn't a tantalizing delay
>> anymore… it's a highly frustrating delay that starts making one bored
>> or angry or confused….
>>
>> The delay from 5 to 7 seconds may be just enough to create a little
>> frustration, which is rapidly vanquished in a poof of release when the
>> pleasure finally comes. But a delay from 3 to 7 seconds might be

>> soooo long that frustration builds up to the point where the pleasure
>> doesn't release it when it finally comes – perhaps the delay is long
>> enough to trigger some cognitive process thinking "WTF is going on, is
>> the pleasure ever gonna come again?"
>>
>> 3 seconds or 5 seconds may be long enough for some anticipation to
>> build and then get fulfilled. If the pleasure came after half a
>> second the experience would basically be one of pleasure never
>> stopping – which in a way would be more pleasurable, but in a way
>> would be less pleasurable, because the process of building an
>> expectation and then getting it fulfilled would not be there… and at
>> the cognitive rather than purely physiological level, pleasure is
>> largely about expectations and their fulfillment and disappointment…
>>
>> Now, human sexual arousal is not one-dimensional, there's not just one
>> "pleasure button" being pushed at various intervals. Rather, there are
>> various different tissues which are stimulated by different things,
>> and which get pleased, roused to anticipation, and become frustrated
>> upon neglect – with different time-scales. So what one has in a real
>> situation of human sexual arousal is the above story, but on a variety
>> of different tissues, each with their own characteristic time-scales.
>> There is a sort of symphony of anticipation, fulfillment and
>> frustration, as at any given time some tissues may be satisfied, some
>> may be anticipating, and some may be frustrated….
>>
>> And then of course, in human sexual arousal, there is also an overlay
>> of more complex emotions besides pleasure and its expectation and
>> frustration. When the other party seems eager and keeps getting
>> ahead of what seems to be the natural rhythm, that may make one feel
>> loved or at least desired; a lackluster or overly robotic rhythm may
>> make one feel that the other party isn't really into it; etc. The
>> arousal of these emotions is more variable among different people,
>> whereas the basic logic of arousal via expectation and frustration is
>> more generic. A person's specific physiological and emotional
>> makeup, layered on top of the basic biology of human physical pleasure
>> and the math of expectation fulfillment and frustration, add up to
>> form that person's personal sexual pleasure calculus…
>>
>> The next ingredient to introduce into the story is PATTERNS. In a
>> sexual context, stimulation is not just a matter of delivering
>> pleasure to one or another tissue; pleasure may be delivered in
>> specific patterns of touch geometry and intensity, and the body comes
>> to expect these patterns. A "French corkscrew twist" movement of one
>> sex organ within or around the other; or a stroke of the hand
>> repeatedly up and down the lover's hip; etc. etc. Such a movement
>> pattern will typically have a certain timing, and can be accelerated
>> or delayed, inducing dynamics of expectation, fulfillment,
>> frustration, tension, etc. Furthermore, movement patterns impact
>> each other, as they may involve adjacent, overlapping or more subtly
>> cross-connected parts of the body … so that fulfillment of one may
>> cause deferral of another, etc. Kissing on the neck faster and faster
>> may cause what's happening with the genitals to temporarily get slower
>> and softer, etc. – pleasure via acceleration in one place correlated
>> with pleasure via temporary frustration and then fulfillment in

>> another place.
>>
>> And this complexity brings us finally back to music. In music we
>> have many complex patterns unfolding through time, each eliciting
>> expectations regarding what will come next. The symmetries of musical
>> scales and chords are instrumental in forming these expectations.
>> When a chord pattern has been repeating, one expects it will continue.
>> When a melodic line has been going up a certain scale, one expects it
>> will continue. When a melodic line has been going up and down within
>> a certain scale, one thinks it will stay within that scale. When two
>> melodic patterns have occurred, each immediately followed by their
>> inversions … and then a third one occurs, one expects it will be
>> immediately followed by its inversion. And so forth.
>>
>>
>> So what we have in music is a collection of interlocking patterns,
>> each giving rise to expectations. Each of these expectations may
>> happen a little sooner or a little later than expected, thus causing
>> extra bursts of pleasure in accordance with the basic logic of
>> anticipation, frustration and pleasure. Making one pattern continue
>> sooner or more intensely, will generally cause some other pattern to
>> continue later or less intensely — thus weaving a complex web of
>> fulfillments and frustrations, which reminds us of the complex webs of
>> fulfillment and expectation in our inner and outer lives.
>>
>>
>> A series of notes in time displaying an increasing amount of pattern,
>> will often have the property of fulfilling an increasing number of the
>> expectations elicited based on the previously occurring patterns. So
>> on the whole it will give the feeling of increasing pleasure –
>> increasing fulfillment of expectation. But of course it's hard for
>> this to go on too long, because creating an increasing amount of
>> pattern is difficult, assuming these patterns must have some
>> emotionally evocative content in themselves, and that all the patterns
>> are created via arranging the basic notes, chords and scales in the
>> vocabulary of modern music.
>> So typically in a substantial piece of music, after a build-up in
>> which the time-series of musical events generates a greater and
>> greater density of patterns, things relax. Here the intellect is
>> being less stimulated, but if the relaxation comes with continuation
>> of a pattern that is emotionally resonant, then the experience is
>> still satisfying. We see in this case the combination of the
>> primal/visceral and the mathematical in music. The mathematics of
>> pattern emergence and tension buildup are critical, but there is also
>> a simple matter of resonance with the rhythm of human bodily life –
>> there is something innately satisfying, to anyone with a human body,
>> about quieting down and proceeding at a slow regular rhythm after a
>> huge burst of increasingly complexly patterned activity.
>>
>>
>> On Mon, Jul 11, 2016 at 9:55 AM, Ben Goertzel <[redacted]> wrote:
>> > Formulating the norm is exactly what music theory is about, right?
>> > But the tricky thing is knowing which deviations from the norm are
>> > going to sound awesome and which are going to sound like screw-ups....

>> >
>> > You know Schmidhuber's theory of beauty as increase in compressibility?
>> >
>> > http://people.idsia.ch/~juergen/creativity.html
>> >
>> > http://people.idsia.ch/~juergen/sice2009.pdf
>> >
>> > It's not quite right but it's insightful ... a deviation from the norm
>> > that sounds awesome usually is one that causes some meaningful but
>> > not-wholly-expected pattern to come about ... i.e. an increase in
>> > compressibility ...
>> >
>> > Actually I think an **increase in the number of compressing patterns**
>> > is perhaps more important than an increase in compressibility.
>> >
>> > "Surprising fulfillment of expectations" means:
>> >
>> > -- the previous expectation is fulfilled, i.e the previous compressing
>> > pattern continues
>> >
>> > -- a new, surprising factor is found ... but probably one that also
>> > leads to a new pattern in the overall perceived music, hence a
>> > new/different compressing pattern
>> >
>> > So surprising fulfillment of expectations is one route to get to
>> > "increase in the number of compressing patterns" ...
>> >
>> > But music theory constrains the set of ways that one can get increase
>> > in the number of compressing patterns, without getting too complex
>> > (within the context of the 12-note scale... but if one used other
>> > scales one would find similar mathematical structures) ...
>> >
>> >
>> > ...
>> >
>> > About your other question: So far the recurrent neural nets,
>> > convolutional neural nets etc. that have been used for language
>> > generation based on corpus-based-training, tend to generate gibberish
>> > that looks OK in the short run but nonsensical in the medium run.
>> > I.e. plausible looking phrases but meaningless/fucked-up long
>> > sentences or paragraphs...
>> >
>> > A game like Go or Atari games is quite different from natural language
>> > because it's a closed system, so the scope of patterns that can occur
>> > is much more limited than in the case of anything involved with real
>> > human life... In the case of stuff that's real-human-life-related,
>> > it's hard to hide from the need to understand particulars in a general
>> > context ... but in a game the context is always the game, which
>> > simplifies things a lot (unless the game were as complicated as the
>> > real world, but that's never the case in 2016 ...)...
>> >
>> > I can explain to you my specific plan for solving the "sensible,
>> > context-appropriate language generation" problem in an OpenCog context
>> > sometime if you're curious...

>> >
>> > part 1 is here
>> >
>> > https://arxiv.org/abs/1401.3372
>> >
>> > and part 2 is here
>> >
>> > http://wiki.opencog.org/wikihome/index.php/Lojbanic_Relex2Logic
>> >
>> > ... but those documents are kind of insular, they're hard to
>> > understand without a rich knowledge of how OpenCog NLP system
>> > currently works... we can discuss F2F or on Skype sometime perhaps...
>> >
>> > -- Ben
>> >
>> >
>> > On Mon, Jul 11, 2016 at 9:37 PM, jeffrey E. <jeevacation@gmail.com>
>> > wrote:
>> >> suprise is the the breaking of the expectation. . first we have to
>> >> formularize the norm. why can a an adult immediatly here an
>> >> obvious "
>> >> wrong note " in a mozart piece of thousands of notes. ? it is a spike
>> >> on
>> >> the sphere .? . why are certain harmonics pleasing. i think it
>> >> might
>> >> take a lower energy to deconstruct into their fundamentals?
>> >> dissocnace
>> >> takes so much energy like a key on glass scratch that it elicits
>> >> physical
>> >> signs of pain. noam thinks that the ability to recoginze might
>> >> be an
>> >> integral part of development, ie not merely learned. .
>> >>
>> >> can either deep mind , alpha go or any system like the ones set to
>> >> play
>> >> video games on their own, be fed english language speakers and then
>> >> be
>> >> able to construct simple sentences.? a deliverable that i have been
>> >> asking you guys for , for years now. is learning the video game
>> >> different ? thanks
>> >>
>> >> On Mon, Jul 11, 2016 at 9:30 AM, Ben Goertzel <[redacted]> wrote:
>> >>>
>> >>> Sure... Meyer's "surprising fulfillment of expectations" is all about
>> >>> time, right? But among the several questions is raises are
>> >>>
>> >>> -- what kinds of expectations are elicited?
>> >>>
>> >>> -- what constitutes surprise and why?
>> >>>
>> >>> The music theory elaborated in those papers explains what kinds of
>> >>> expectations tend to be elicited in music ... which then conditions
>> >>> what will be perceived as surprising and what will not...
>> >>>

>> >>> E.g. if a melodic line is operating with a certain scale for a while,
>> >>> there will be an expectation that the next note is within that same
>> >>> scale.... If the next note is not within that scale, but rather what
>> >>> happens is a chord that gives rise to a note in the original scale as
>> >>> a higher harmonic, then one may have a surprising fulfillment of
>> >>> expectations of a mathematically explicable sort. But it may be that
>> >>> playing this latter chord a little bit LATER than the beat that would
>> >>> be expected via assumption of periodicity, gives the whole thing a bit
>> >>> more oomph -- in this case one is fulfilling the expectation in a
>> >>> temporally slightly surprising way ... but there's also the "joke" of
>> >>> leaving the listener waiting a bit to see if the scale will be
>> >>> continued or not, and then after the wait fulfilling it in a way that
>> >>> is both more (more notes) and less (the expected scale is only there
>> >>> in a higher harmonic) than expected.... There is a physiological
>> >>> metaphor to how the "heart misses a beat" sometime... and an emotional
>> >>> resonance with the feeling of waiting with bated breath to see what
>> >>> will happen, and then finally something happens and it's richer than
>> >>> expected so a bit overwhelming...
>> >>>
>> >>> That's a trivial example but it illustrates how the timing and the
>> >>> static-music-theory and the emotion and body-references all play
>> >>> together in the context of surprising fulfillment of expectations...
>> >>>
>> >>>
>> >>>
>> >>>
>> >>>
>> >>> On Mon, Jul 11, 2016 at 8:41 PM, jeffrey E. <jeevacation@gmail.com>
>> >>> wrote:
>> >>> > i think of it like points in space . the rythms are the disttance
>> >>> > between
>> >>> > the points. and the melody is the projection on a plane. . music
>> >>> > needs
>> >>> > recapitualtion . unless indian, your papers are more like work on
>> >>> > soap
>> >>> > bubbles . shapes , but little timing.
>> >>> >
>> >>> > On Sun, Jul 10, 2016 at 10:56 PM, Ben Goertzel <[redacted]>
>> >>> > wrote:
>> >>> >>
>> >>> >> I agree that rhythm is important but the actual sequence (and
>> >>> >> concurrent arrangement) of notes is important too... those papers
>> >>> >> certainly don't tell the whole story but I think they tell part of
>> >>> >> the
>> >>> >> story...
>> >>> >>
>> >>> >> I experimented a lot in the 90s with: taking series of notes
>> >>> >> evolved
>> >>> >> by a GA (well the GA evolved the coefficients of a
>> >>> >> fractal-generating
>> >>> >> iterated function system), and then playing the same evolved
>> >>> >> note-series with different timings. I.e., I made up various
>> >>> >> timing
>> >>> >> rules, and I also played the notes with timings that I made up

>> >>> >> myself.
>> >>> >> Definitely it's true that the timing is critical, and the same
>> >>> >> series of notes with different timing will sound totally different
>> >>> >> and
>> >>> >> have a different feeling...
>> >>> >>
>> >>> >> However, nevertheless, the mathematical structures noted in those
>> >>> >> papers are important...
>> >>> >>
>> >>> >> How timing interacts with these mathematical structures is one of
>> >>> >> many
>> >>> >> open questions, right?
>> >>> >>
>> >>> >> Put crudely, I think the algebra (as hinted in those papers) of a
>> >>> >> series of notes identifies **what patterns are there** to be easily
>> >>> >> recognized in the series of notes. But there are always gonna be
>> >>> >> too
>> >>> >> many patterns there. The timing puts boundaries around some
>> >>> >> patterns
>> >>> >> and not others, thus narrowing down the scope of possible patterns
>> >>> >> in
>> >>> >> the note-series, and identifying some rather than others.... And
>> >>> >> the
>> >>> >> timing also is what resonates with the dynamics of human emotions
>> >>> >> and
>> >>> >> human body-rhythms ...
>> >>> >>
>> >>> >> so the subtlety of timing in music is partly that it has to serve
>> >>> >> multiple functions
>> >>> >>
>> >>> >> -- emphasizing certain ones, among the many patterns implicit
>> >>> >> mathematically in a series of notes
>> >>> >>
>> >>> >> -- resonating with human emotion and body rhythms
>> >>> >>
>> >>> >> ... ben
>> >>> >>
>> >>> >>
>> >>> >>
>> >>> >>
>> >>> >> On Mon, Jul 11, 2016 at 10:40 AM, jeffrey E.
>> >>> >> <jeevacation@gmail.com>
>> >>> >> wrote:
>> >>> >> > third paper same problem, bach was to have said playing piano
>> >>> >> > is
>> >>> >> > easy
>> >>> >> > just push the right note at the right TIME . one without the
>> >>> >> > other ,
>> >>> >> > is
>> >>> >> > meaningless. imagine a minute wait between any of the group
>> >>> >> > theory
>> >>> >> > relevant notes. it woudl not be music
>> >>> >> >
>> >>> >> > On Sun, Jul 10, 2016 at 10:26 PM, Ben Goertzel <[redacted]>

>> >>> >> > wrote:
>> >>> >> >>
>> >>> >> >> Just re-sending with a more appropriate subject line...
>> >>> >> >>
>> >>> >> >> ****
>> >>> >> >>
>> >>> >> >> Hmmm...
>> >>> >> >>
>> >>> >> >> I have been thinking a lot about music too, but from a different
>> >>> >> >> perspective...
>> >>> >> >>
>> >>> >> >> Do you know this paper on Combinatorial Music Theory?
>> >>> >> >>
>> >>> >> >> paper:
>> >>> >> >> http://andrewduncan.net/cmt/
>> >>> >> >>
>> >>> >> >> video:
>> >>> >> >> https://www.youtube.com/watch?v=OMDtp89Xqlw
>> >>> >> >>
>> >>> >> >> It's extremely good, it clarifies some basics of music theory in
>> >>> >> >> a
>> >>> >> >> mathematical way without the confusing archaic terminology of
>> >>> >> >> standard
>> >>> >> >> music theory... and suggests various interesting new
>> >>> >> >> directions...
>> >>> >> >>
>> >>> >> >> This paper is also related and somewhat worthwhile
>> >>> >> >>
>> >>> >> >> https://www.math.washington.edu/~morrow/336_09/papers/Ada.pdf
>> >>> >> >>
>> >>> >> >> though neither as easy-to-read nor as interesting...
>> >>> >> >>
>> >>> >> >> What these papers are getting as are the hidden
>> >>> >> >> abstract-algebraic
>> >>> >> >> and
>> >>> >> >> information-theoretic structures underlying melody and
>> >>> >> >> harmony...
>> >>> >> >>
>> >>> >> >> What you're talking about regarding symphonies is sort of like
>> >>> >> >> "narrative structure" in stories it seems like -- or "discourse
>> >>> >> >> planning" in dialogue -- i.e. it's higher-level
>> >>> >> >>
>> >>> >> >> That level is important, for sure. But what the papers I've
>> >>> >> >> linked
>> >>> >> >> above are getting at is a bit lower-level --- more analogous to
>> >>> >> >> the
>> >>> >> >> syntax and phrase/sentence level semantics of language, I would
>> >>> >> >> say.
>> >>> >> >> The algebra and information theory of melody and harmony have to
>> >>> >> >> work
>> >>> >> >> out at the level of individual chords and melodic passages, for
>> >>> >> >> the
>> >>> >> >> higher-level development of a symphony or other complex work to
>> >>> >> >> make

>> >>> >> >> sense...
>> >>> >> >>
>> >>> >> >> About
>> >>> >> >>
>> >>> >> >> > I mashed all of the four symphonies together ,
>> >>> >> >> > playing recordings of the 3rd 5th 6th 7th all overlayed
>> >>> >> >> > on
>> >>> >> >> > each
>> >>> >> >> > other,
>> >>> >> >>
>> >>> >> >> I have done stuff like that before, but not with classical
>> >>> >> >> music...
>> >>> >> >> with my own recordings ;) .... Do you have a sound file of your
>> >>> >> >> experiment? I'd be curious to hear...
>> >>> >> >>
>> >>> >> >> Interestingly, the "plumbing" work we've been doing to connect
>> >>> >> >> OpenCog
>> >>> >> >> to the Hanson robots would also enable us to use OpenCog for
>> >>> >> >> music
>> >>> >> >> composition / improvisation experimentation ... (i.e. we've been
>> >>> >> >> dealing with real-time input and output, which we hadn't been
>> >>> >> >> doing
>> >>> >> >> before)
>> >>> >> >>
>> >>> >> >> But at the moment (this opinion is of course subject to
>> >>> >> >> revision) I
>> >>> >> >> somewhat feel that the basic problem of "what makes a melody
>> >>> >> >> /harmony
>> >>> >> >> / rhythm pattern sound emotionally and cognitively appealing"
>> >>> >> >> has to
>> >>> >> >> be solved before one moves on to issues of symphonic
>> >>> >> >> structure....
>> >>> >> >> I.e., we probably gotta solve folk music before we can solve
>> >>> >> >> Beethoven
>> >>> >> >> or Bartok ...
>> >>> >> >>
>> >>> >> >> Meyer's old theory of "surprising fulfillment of expectations"
>> >>> >> >>
>> >>> >> >>
>> >>> >> >>
>> >>> >> >>
>> >>> >> >>
>> >>> >> >> http://rhythmcoglab.coursepress.yale.edu/wp-content/uploads/sites/5/2014/10/Emotion-and-Meaning-in-Music.pdf
>> >>> >> >>
>> >>> >> >> is basically correct IMO (if you don't know that book check it
>> >>> >> >> out,
>> >>> >> >> you'll love his classical music examples) ... but the subtle
>> >>> >> >> point
>> >>> >> >> is
>> >>> >> >> that the expectations and the surprise we experience are a
>> >>> >> >> subtle
>> >>> >> >> mix
>> >>> >> >> of

>> >>> >> >>
>> >>> >> >> -- basic mathematical music-structure factors, as in the vein of
>> >>> >> >> the
>> >>> >> >> two papers I linked above
>> >>> >> >>
>> >>> >> >> -- human psychology factors as modeled e.g. in Joscha's work and
>> >>> >> >> in
>> >>> >> >> the Component Process Model (
>> >>> >> >>
>> >>> >> >>
>> >>> >> >>
>> >>> >> >>
>> >>> >> >> http://boccignone.di.unimi.it/CompAff2015_files/Phil.%20Trans.%20R.%20Soc.%20B-2009-Scherer-3459-74.pdf)
>> >>> >> >> which we have introduced into the OpenCog / Hanson Robot
>> >>> >> >> codebase to
>> >>> >> >> fill in certain gaps in Psi
>> >>> >> >>
>> >>> >> >> -- human body-rhythm patterns, to do with the way the rhythms of
>> >>> >> >> different subsystems of our physical bodies overlay on each
>> >>> >> >> other,
>> >>> >> >> which we perceive all the time sub and semi consciously and
>> >>> >> >> which
>> >>> >> >> influence our perception of music; obviously even classical
>> >>> >> >> music
>> >>> >> >> without a drumbeat is highly rhythmic...
>> >>> >> >>
>> >>> >> >> -- more abstract cognitive pattern recognition
>> >>> >> >>
>> >>> >> >> So a good melody packs up "surprising fulfillment of
>> >>> >> >> expectations"
>> >>> >> >> where the expectation and fulfillment are assessed according to
>> >>> >> >> a
>> >>> >> >> combination of the above 4 factors ... and if you leave any of
>> >>> >> >> the
>> >>> >> >> above 4 factors out you're going to get lots of "false
>> >>> >> >> positives"
>> >>> >> >> ...
>> >>> >> >>
>> >>> >> >> All of the above factors are there in Chinese, African etc.
>> >>> >> >> music as
>> >>> >> >> well as Western music, but manifested in different ways...
>> >>> >> >>
>> >>> >> >> I can pretty clearly see how to seriously investigate the above
>> >>> >> >> but
>> >>> >> >> I
>> >>> >> >> can't at the moment see a "quick and dirty" way to make huge
>> >>> >> >> progress
>> >>> >> >> quickly ... while seemingly simple, the question of "what makes
>> >>> >> >> a
>> >>> >> >> melody appealing" actually wraps up a lot of issues ... BODY,
>> >>> >> >> EMOTION, COGNITION ... plus MATH-OF-MUSIC ...
>> >>> >> >>
>> >>> >> >> Fascinating stuff though ;)

>> >>> >> >>
>> >>> >> >> If you want to design a research programme in this direction I'd
>> >>> >> >> be
>> >>> >> >> game to participate; I don't want to drop my other OpenCog R&D
>> >>> >> >> obviously but music just fascinates me at a heart as well as
>> >>> >> >> head
>> >>> >> >> level, so I'd be willing to put some time into this in parallel
>> >>> >> >> with
>> >>> >> >> making the Hanson robots work... I do have a feeling that to
>> >>> >> >> really
>> >>> >> >> crack the problem of what makes a melody sound good, one has to
>> >>> >> >> crack
>> >>> >> >> the problem of how feeling and body and cognition work together,
>> >>> >> >> which
>> >>> >> >> is a key problem for AGI generally speaking...
>> >>> >> >>
>> >>> >> >> -- Ben
>> >>> >> >>
>> >>> >> >> P. S.
>> >>> >> >> Of course, complex development of themes and counter and sub
>> >>> >> >> themes
>> >>> >> >> and so forth is not exclusive to Western classical music....
>> >>> >> >> For
>> >>> >> >> instance this 30 minute instrumental-rock song composed by
>> >>> >> >> Buckethead
>> >>> >> >> in memoriam for his mother has incredible subtlety of
>> >>> >> >> development
>> >>> >> >>
>> >>> >> >> https://www.youtube.com/watch?v=E5PXYehriYY
>> >>> >> >>
>> >>> >> >> ... so many themes introduced in the first half and then
>> >>> >> >> complexly,
>> >>> >> >> genetically crossed over and synergized in the second half.. It
>> >>> >> >> is
>> >>> >> >> my
>> >>> >> >> firm conviction that Buckethead will be remembered as the
>> >>> >> >> Beethoven
>> >>> >> >> of
>> >>> >> >> the early 21st century ;) ...
>> >>> >> >>
>> >>> >> >> For me the ultimate is Prometheus, by Scriabin, though...
>> >>> >> >>
>> >>> >> >> https://www.youtube.com/watch?v=5GEwho6Dbnc
>> >>> >> >>
>> >>> >> >> do you know it? Wow.... This is cognitive and emotional
>> >>> >> >> development
>> >>> >> >> beyond the ordinary human level, such as only a true genius
>> >>> >> >> madman
>> >>> >> >> could produce. I had an amazing mental experience in San
>> >>> >> >> Francisco
>> >>> >> >> in 2012 listening to Prometheus 10 times in succession ... try
>> >>> >> >> it
>> >>> >> >> sometime...
>> >>> >> >>

>> >>> >> >>
>> >>> >> >>
>> >>> >> >> On Mon, Jul 11, 2016 at 9:39 AM, jeffrey E.
>> >>> >> >> <jeevacation@gmail.com>
>> >>> >> >> wrote:
>> >>> >> >> > looking for AI and music. . a melody is a strange object,
>> >>> >> >> > it
>> >>> >> >> > is
>> >>> >> >> > an
>> >>> >> >> > inter
>> >>> >> >> > as well as intra relation with notes and time. . there are
>> >>> >> >> > inherent
>> >>> >> >> > harmonies. and dissonance. . what i wrote to chonsky this
>> >>> >> >> > moring
>> >>> >> >> >
>> >>> >> >> > today I conducted an experiment encouraged by Noam's wholly
>> >>> >> >> > justified
>> >>> >> >> > aggressive and detailed directives to joscha. . joshcha
>> >>> >> >> > focused
>> >>> >> >> > on
>> >>> >> >> > layers
>> >>> >> >> > being developed in the brain . the timing for the development
>> >>> >> >> > of
>> >>> >> >> > each
>> >>> >> >> > layer
>> >>> >> >> > being different per species .
>> >>> >> >> > I postulate that music might be a frosted window into that
>> >>> >> >> > structure.
>> >>> >> >> > symphonies begin with their first " layer " a theme. in fact
>> >>> >> >> > ,
>> >>> >> >> > there
>> >>> >> >> > might be more than one theme in the first layer , , the
>> >>> >> >> > second
>> >>> >> >> > part
>> >>> >> >> > of
>> >>> >> >> > symphonic form is the complex development stage. where
>> >>> >> >> > those
>> >>> >> >> > themes
>> >>> >> >> > are inverted, deconstructed , reconstructed etc ,and the
>> >>> >> >> > development
>> >>> >> >> > stage
>> >>> >> >> > takes the most time . in the conclusion of the symphonic
>> >>> >> >> > form
>> >>> >> >> > the
>> >>> >> >> > recapitulation of all that has come before it forms a "
>> >>> >> >> > phenenoma
>> >>> >> >> > of
>> >>> >> >> > the
>> >>> >> >> > piece " a whole ,made up of its smaller concepts . As
>> >>> >> >> > opposed
>> >>> >> >> > to
>> >>> >> >> > listening to music to record which neuron is firing, as most
>> >>> >> >> > musciolgists
>> >>> >> >> > attempt . I propose that the music may be the audible

>> >>> >> >> > result of
>> >>> >> >> > those
>> >>> >> >> > neurons firing, made possible by a select few who would
>> >>> >> >> > attempt
>> >>> >> >> > to
>> >>> >> >> > notate
>> >>> >> >> > those neuronal firings. Beethoven for example.
>> >>> >> >> >
>> >>> >> >> > The experiment . I mashed all of the four symphonies
>> >>> >> >> > together
>> >>> >> >> > ,
>> >>> >> >> > playing recordings of the 3rd 5th 6th 7th all overlayed
>> >>> >> >> > on
>> >>> >> >> > each
>> >>> >> >> > other,
>> >>> >> >> > playing at the same time. - the way a brain might develop.
>> >>> >> >> > I
>> >>> >> >> > expected
>> >>> >> >> > an
>> >>> >> >> > ordered noise but to the surprising contrary , IT WAS
>> >>> >> >> > AMAZING.
>> >>> >> >> > .
>> >>> >> >> > you can hear new "concepts " forming,
>> >>> >> >> >
>> >>> >> >> > iI wonder whether in the mind of a blind child , the " music"
>> >>> >> >> > would
>> >>> >> >> > be
>> >>> >> >> > created even without the visual referencial. but created
>> >>> >> >> > none
>> >>> >> >> > the
>> >>> >> >> > less.
>> >>> >> >> > later when the visual can be tied to concepts , the anatomy
>> >>> >> >> > may
>> >>> >> >> > be
>> >>> >> >> > hijacked
>> >>> >> >> > to produce sounds . that somehow relate to the concepts. .
>> >>> >> >> >
>> >>> >> >> > I tried to mix music from different cultures- it didn't work.
>> >>> >> >> > African
>> >>> >> >> > does not work with western europe,- chinese works with
>> >>> >> >> > neither of
>> >>> >> >> > the
>> >>> >> >> > other
>> >>> >> >> > two. but within the same cultural music (the brain of the
>> >>> >> >> > local
>> >>> >> >> > species
>> >>> >> >> >) the mash ups are beautiful.
>> >>> >> >> >
>> >>> >> >> > I would note that computers engage in "parallel processing"
>> >>> >> >> > only
>> >>> >> >> > in
>> >>> >> >> > order
>> >>> >> >> > to take a hard problem and break it into its component parts
>> >>> >> >> > ,

>> >>> >> >> > working
>> >>> >> >> > on
>> >>> >> >> > each component separately, , here each problem Interacts
>> >>> >> >> > and
>> >>> >> >> > the
>> >>> >> >> > their
>> >>> >> >> > resolutions interact in remarkable ways.
>> >>> >> >> > --
>> >>> >> >> >
>> >>> >> >> > On Sun, Jul 10, 2016 at 9:37 PM, Ben Goertzel
>> >>> >> >> > <[redacted]>
>> >>> >> >> > wrote:
>> >>> >> >> >>
>> >>> >> >> >> (i.e. being a "fiscal sponsor" for the HLAI/AGI conference is
>> >>> >> >> >> within
>> >>> >> >> >> Humanity+'s mandate as a 501(c)3, so there's no problem
>> >>> >> >> >> here...)
>> >>> >> >> >>
>> >>> >> >> >> On Mon, Jul 11, 2016 at 9:36 AM, Ben Goertzel
>> >>> >> >> >> <[redacted]>
>> >>> >> >> >> wrote:
>> >>> >> >> >> > We can route the donation through Humanity+, which is a
>> >>> >> >> >> > 501(c)3
>> >>> >> >> >> > ...
>> >>> >> >> >> > as
>> >>> >> >> >> > we have done with some of your previous donations for my
>> >>> >> >> >> > research...
>> >>> >> >> >> >
>> >>> >> >> >> > On Mon, Jul 11, 2016 at 9:33 AM, jeffrey E.
>> >>> >> >> >> > <jeevacation@gmail.com>
>> >>> >> >> >> > wrote:
>> >>> >> >> >> >> is it a 501 c 3
>> >>> >> >> >> >>
>> >>> >> >> >> >> On Sun, Jul 10, 2016 at 9:30 PM, Ben Goertzel
>> >>> >> >> >> >> <[redacted]>
>> >>> >> >> >> >> wrote:
>> >>> >> >> >> >>>
>> >>> >> >> >> >>> Hey there,
>> >>> >> >> >> >>>
>> >>> >> >> >> >>> Hope you're well...
>> >>> >> >> >> >>>
>> >>> >> >> >> >>> I'll send you another email about connecting this summer
>> >>> >> >> >> >>> while
>> >>> >> >> >> >>> I'm
>> >>> >> >> >> >>> in
>> >>> >> >> >> >>> the US if you'll be around...
>> >>> >> >> >> >>>
>> >>> >> >> >> >>> This email pertains to the AGI-16 / Human-Level AI
>> >>> >> >> >> >>> conference
>> >>> >> >> >> >>> which
>> >>> >> >> >> >>> occurs upcoming week in New York (July 16-19).... at the
>> >>> >> >> >> >>> New
>> >>> >> >> >> >>> School.
>> >>> >> >> >> >>>

>> >>> >> >> >> >>> We are doing the last-minute nitty-gritty conference
>> >>> >> >> >> >>> planning
>> >>> >> >> >> >>> and
>> >>> >> >> >> >>> find
>> >>> >> >> >> >>> ourselves short on cash for snacks and for drinks at the
>> >>> >> >> >> >>> conference
>> >>> >> >> >> >>> reception / poster-session ... (the New School venue
>> >>> >> >> >> >>> proved
>> >>> >> >> >> >>> more
>> >>> >> >> >> >>> costly than planned... we chose New School as an old
>> >>> >> >> >> >>> college
>> >>> >> >> >> >>> friend
>> >>> >> >> >> >>> of
>> >>> >> >> >> >>> mine is a prof and administrator there...)
>> >>> >> >> >> >>>
>> >>> >> >> >> >>> So I'm wondering if you might be willing to do a US$3000
>> >>> >> >> >> >>> sponsorship
>> >>> >> >> >> >>> (we have two other sponsors at the US$3000 level:
>> >>> >> >> >> >>> Vicarious
>> >>> >> >> >> >>> Systems,
>> >>> >> >> >> >>> and Demiurge Technologies).... (We don't actually need
>> >>> >> >> >> >>> the
>> >>> >> >> >> >>> $$
>> >>> >> >> >> >>> wired
>> >>> >> >> >> >>> immediately, a commitment is enough)...
>> >>> >> >> >> >>>
>> >>> >> >> >> >>> We can then serve everyone "drinks and snacks courtesy of
>> >>> >> >> >> >>> Jeffrey
>> >>> >> >> >> >>> Epstein Foundation", or whatever foundation name you
>> >>> >> >> >> >>> prefer
>> >>> >> >> >> >>> (or
>> >>> >> >> >> >>> just
>> >>> >> >> >> >>> keep it quiet if you prefer)
>> >>> >> >> >> >>>
>> >>> >> >> >> >>> This is not insanely critical, but it would be a help...
>> >>> >> >> >> >>> I
>> >>> >> >> >> >>> believe
>> >>> >> >> >> >>> these conferences are still quite valuable in terms of
>> >>> >> >> >> >>> keeping
>> >>> >> >> >> >>> free
>> >>> >> >> >> >>> and open dialogue about AGI going in the research
>> >>> >> >> >> >>> community,
>> >>> >> >> >> >>> as
>> >>> >> >> >> >>> opposed to having AGI work entirely sucked into the
>> >>> >> >> >> >>> proprietary
>> >>> >> >> >> >>> halls
>> >>> >> >> >> >>> of big companies...
>> >>> >> >> >> >>>
>> >>> >> >> >> >>> thanks
>> >>> >> >> >> >>> Ben
>> >>> >> >> >> >>>
>> >>> >> >> >> >>>
>> >>> >> >> >> >>> --
>> >>> >> >> >> >>> Ben Goertzel, PhD

>> >>> >> >> >> >>> http://goertzel.org
>> >>> >> >> >> >>>
>> >>> >> >> >> >>> Super-benevolent super-intelligence is the thought the
>> >>> >> >> >> >>> Global
>> >>> >> >> >> >>> Brain
>> >>> >> >> >> >>> is
>> >>> >> >> >> >>> currently struggling to form...
>> >>> >> >> >> >>
>> >>> >> >> >> >>
>> >>> >> >> >> >>
>> >>> >> >> >> >>
>> >>> >> >> >> >> --
>> >>> >> >> >> >> please note
>> >>> >> >> >> >> The information contained in this communication is
>> >>> >> >> >> >> confidential, may be attorney-client privileged, may
>> >>> >> >> >> >> constitute inside information, and is intended only for
>> >>> >> >> >> >> the use of the addressee. It is the property of
>> >>> >> >> >> >> JEE
>> >>> >> >> >> >> Unauthorized use, disclosure or copying of this
>> >>> >> >> >> >> communication or any part thereof is strictly prohibited
>> >>> >> >> >> >> and may be unlawful. If you have received this
>> >>> >> >> >> >> communication in error, please notify us immediately by
>> >>> >> >> >> >> return e-mail or by e-mail to jeevacation@gmail.com, and
>> >>> >> >> >> >> destroy this communication and all copies thereof,
>> >>> >> >> >> >> including all attachments. copyright -all rights reserved
>> >>> >> >> >> >
>> >>> >> >> >> >
>> >>> >> >> >> >
>> >>> >> >> >> > --
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>> >>> >> >> >> > Brain
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>> >>> >> >> >
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>> >>> >> >> >
>> >>> >> >> > --
>> >>> please note

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>> >>> >> >> > and may be unlawful. If you have received this
>> >>> >> >> > communication in error, please notify us immediately by
>> >>> >> >> > return e-mail or by e-mail to jeevacation@gmail.com, and
>> >>> >> >> > destroy this communication and all copies thereof,
>> >>> >> >> > including all attachments. copyright -all rights reserved
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>> >>> >> > communication in error, please notify us immediately by
>> >>> >> > return e-mail or by e-mail to jeevacation@gmail.com, and
>> >>> >> > destroy this communication and all copies thereof,
>> >>> >> > including all attachments. copyright -all rights reserved
>> >>> >>
>> >>> >>
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>> >>> currently struggling to form...
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>> >> Unauthorized use, disclosure or copying of this
>> >> communication or any part thereof is strictly prohibited
>> >> and may be unlawful. If you have received this
>> >> communication in error, please notify us immediately by
>> >> return e-mail or by e-mail to jeevacation@gmail.com, and
>> >> destroy this communication and all copies thereof,
>> >> including all attachments. copyright -all rights reserved
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