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Kreativitetens musik

v/ *John Sigerson*

Lektion 4 i LaRouchePAC's Undervisningsserie 2018
»Hvad er det Nye Paradigme?«
17. marts, 2018: dansk/engelsk udskrift

<https://www.youtube.com/watch?v=Aqimdu0-Kjk>

Vært i studiet Megan Beets: Velkommen til fjerde lektion i LaRouchePAC's undervisningsserie, »Hvad er det Nye Paradigme?«. Jeg er Megan Beets og med mig i studiet har jeg Jason Ross. Med os har vi også via video maestro John Sigerson, vores lærer i dag, og et livepublikum i Manhattan.

I løbet af de seneste uger har vi taget et indgående kig på systemet med geopolitik, det aktuelt kollapsende, døende system med geopolitik. Først med Harley Schlanger, som tog os med på et dybtgående kig på de geopolitiske politikkers historie og deres rødder i Det britiske Imperiums begær efter fortsat at regere og kontrollere verden. Dernæst så vi, sammen med Dennis Small, på det reelle indhold, den underliggende, filosofiske synsmåde, der er drivkraften bag disse politikker med synet på naturen og menneskets evner. Jeg vil opfordre alle, især jer, der for nylig har indtegnet jer til undervisningsserien, eller som på et senere tidspunkt falder over denne video, til at gå tilbage og se disse tidligere lektioner og deres tilsvarende diskussioner; for denne serie blev i høj grad udtænkt til at være en serie med en vis idémæssig udvikling.

I dag har vi den store glæde at have John, som er Schiller Instituttets musikdirigent og mangeårig organisator og samarbejdspartner til Lyndon LaRouche, og som vil føre vores diskussion hen imod – og jeg citerer her John fra beskrivelsen af lektionen – »*de aspekter af menneskelige, samfundsmæssige relationer, der gør det muligt for den menneskelige art at udstyre sig intellektuelt og emotionelt til i stigende grad at gøre universet og os selv lykkelige; med Leibniz' koncept om lykke*«. Vi taler

her om området for klassisk æstetik; det vil sige, viden-skaben om Skønheden og det Gode.

Hvis der bliver tid, kan vi tage spørgsmål fra vores online-publikum efter præsentationen; både fra Manhattan, men I kan også sende jeres spørgsmål via e-mail til classes@larouchepac.com.

Jeg vil give ordet til John.

John Sigerson: God eftermiddag. Jeg vil gerne begynde med noget musik, for det er det, vi mest vil beskæftige os med i dag; men vi skal også høre en masse om det. Jeg vil begynde med en sang af Franz Schubert, med titlen, *An die Musik*. Det er en bøn til musik. Teksten lyder:

Du kære, kære kunst!
I hvor mange grå stunder,
Mens jeg var indfanget af livets vilde dans
Har du antændt mit hjerte til varm kærlighed
Og ført mig til en bedre verden.

Ofte er et suk flydt fra dit hjerte,
En sød harmoni fra dig
Har åbnet op for mig
De bedre tiders himmel.
Du kære, kære kunst; jeg takker dig.
[Sigerson synger sangen.]¹

Kunne I høre Mozart i dette? Hvis ikke, så lad mig påpege noget her. [Spiller og synger indledningen til Mozarts *Ave Verum Corpus*]. I Schubert-sangen, vi netop hørte, er det i baslinjen [spiller den indledende baslinje af akkompagnementet til *An die Musik*, og dernæst indledningen af begge linjerne i akkompagnementet]. Lad mig

¹ Oversætter har oversat teksten fra Sigersons egen engelske oversættelse af den tyske tekst. (-red.)

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spille det for jer. Dette er altså en del af en dialog mellem kulturer, en dialog mellem store intellekter. Senere vil vi tale meget mere om denne dialog.

I dag vil jeg guide jer til den fremtidige renæssance af klassisk kultur, som jeg er overbevist om, ikke ville have været mulig uden Lyndon LaRouches opdagelser om kreativitetens forrang, ikke blot i menneskelige relationer, men også i universet som helhed. Jeg træder i baggrunden til fordel for Lyndon LaRouche selv; og til fordel for forskellige uddrag af hans mange skrifter, og ligeledes klip fra video og audio, håber jeg at kunne komme ind på de hovedtemaer, som har optaget ham hele hans liv, som begyndte i 1922. Dette vil også være meget nyttigt, for det vil gøre det muligt for os at fortsætte, hvor Dennis Small slap i den foregående lektion, hvor han talte om den særdeles uheldige David Hume. Jeg vil diskutere den ondartede indflydelse fra den måske ondeste filosof til alle tider, en person, der er baseret på Hume, men som gjorde noget endnu værre; nemlig Immanuel Kant.

Lyndon LaRouche var allerede i sin ungdom optaget af disse filosofiske spørgsmål, og jeg vil læse for jer et citat fra hans beskrivelse af den måde, han tænkte på dette, helt tilbage til, da han var teenager. Første citat: [Fig. 1]

»Hele min intellektuelle og relaterede udvikling ligger i et projekt, som jeg lavede mellem mit 12. og 17. år. Da jeg var 12, lavede jeg en liste over de navne, som jeg dengang mente, var de mest indflydelsesrige engelske, franske og tyske filosoffer i det 17. og 18. århundrede. Jeg valgte [Francis] Bacon, Hobbes, Descartes, Locke, Leibniz, Hume, Rousseau og Kant. Inden længe foragtede jeg Bacon, Hobbes, Locke, Hume og Rousseau. Jeg valgte Leibniz som den eneste sandfærdige tænker på listen, og jeg gav mig selv den opgave at skabe et originalt forsvaret for Leibniz' Monadologi imod Descartes' og Humes modsatrettede standpunkt ...«

Som jeg nævnte, så blev dette diskuteret meget i de tidligere lektioner, så hvis I ikke har hørt dem, så gense dem helt bestemt.

»Det var på baggrund af dette projekt«, fortsætter LaRouche, »at mine begreber om klassisk princip senere voksede frem, i perioden efter krigen. Det afgørende, filosofiske spørgsmål er, at Descartes og Kant, som tidligere Aristoteles, afviser eksistensen af en form for kreativ fornuft, som kan begribes. På denne forkerte præmis insisterer Kant – og romantikerne generelt – at der ikke findes nogen lovmæssig målestok for æstetisk skønhed, og ingen fornuftig (rationel) æstetik overhovedet; men snarere kun de lunefulde griller hos både folkelige publikummer eller de nuværende generationer af kunstnere, der anser sig selv for at være 'professionelle'. Så konflikten mellem Leibniz og Kant er en forløber for Richard Wagners sataniske ondskab mod Johann Sebastian ('Beckmesser') Bach.«

I spørger nok, hvad 'Beckmesser' betyder. Han er en figur fra Wagners opera *Die Meistersinger*, som er, Wagner – der, naturligvis, var en notorisk antisemit – fremstillede denne fyr som en parodi eller en karikatur på en pedantisk tåbe, der er mere interesseret i regler end i noget som helst andet. Han blev selvfølgelig også bagtalt

for at være jøde. Det er altså synspunktet hos Wagner, der var en hardcore romantiker.

I en præsentation på en konference i juli, 1985, karakteriserede LaRouche Immanuel Kant som *»sandsynligvis den ondeste fyr, Tyskland har produceret i moderne tid. Ondere end Hitler, fordi den ødelæggelse, som disse to opnåede, var større på Kants side end på Hitlers.«* Heri var LaRouche helt i overensstemmelse med den store tyske digter og tilhænger af Friedrich Schiller, Heinrich Heine; som, i sin *Zur Geschichte der Religion und Philosophie in Deutschland* (Religionens og filosofiens historie i Tyskland) – som jeg vil stærkt anbefale – karakteriserede Kant som *»den menneskelige ånds Robespierre«*. Men, som Dennis i sidste uge blot kom ind på, men ikke havde tid nok til at gå ind i, så understregede LaRouche, at, for virkelig at forstå, hvor ond, Kant var og er, må man forstå arten af hans brud med Hume. Hume, der mente, at – man ikke virkeligt kan vide noget som helst ud over det, man berører og føler; og selv det kan man heller ikke virkeligt vide. Nemlig, mod slutningen af Humes karriere, fornægtede han ikke alene en skabende Gud, men forkastede også grundlaget for menneskelig, moralsk adfærd; åbenlyst vejen til Jeremy Bentham's forsvar for pæderasti, åger og enhver anden, privat last; angiveligt ud fra det argument, at dette på en eller anden måde bidrager til det offentlige gode, hvilket er latterligt.

Schiller skændtes også med disse folk som Hume og Hobbes, og han havde det følgende at sige i et af sine tidlige breve. Han sagde – næste citat [Fig. 2]:

»Mange af vore tænkere har gjort det til deres anliggende, med deres hånlighed at udrydde dette guddommelige instinkt fra den menneskelige sjæl, at slette guddommens aftryk og sprede denne energi, denne ædle entusiasme, ud i den feje ligegyldigheds kolde, dødbringende, følelsesløse udånding. I den slaviske fornemmelse af deres egen nedgørelse, er de gået i forbund med denne farlige fjende af velvillig egeninteresse for at forklare et fænomen, der var for guddommeligt for deres forsnævrede hjerter. Af deres udtalte selvished har de spundet deres triste teori og har gjort deres egne begrænsninger til målestokken for Skaberen – forfaldne slaver, der skriger frihed midt i raslen fra deres lænker.«

Jeg må sige, at Schiller virkelig ramte hovedet på sømmet her, for han påpeger begge sider af det problem, som vi vil gennemgå. På den ene side har man folk, der siger, at Skaberen er totalt uden for erkendelse, så vi må følge reglerne. Der er andre folk, der på sidelinjen fremfører, at Skaberen ikke kan erkendes, og derfor er der frit slag for alting. De radikale utilitarister, som den ældre Hume og Bentham og så fremdeles, vidste, de havde et problem, som er, at de vidste, at denne totale libertinisme (tøjlesløs adfærd) ikke virkeligt kunne strømme gennem hele samfundet. Kant var helt klar over dette; han var totalt involveret i sit arbejde med Hume og alle de britiske, radikale utilitarister. Men, sagde han, problemet er, at vi har brug for en eller anden mere robust struktur, som ville være nødvendig for permanent at udslette kreativitet – som han for øvrigt kaldte for en noumenon (tingen i sig selv), dvs. noget, der er totalt ukendt. Det eksisterer; man kan måske vide, at Gud eksisterer, men man

kan intet som helst vide om ham, fra menneskers side, der kun kan forstå fænomener. Det var den store forskel, som Kant skabte, og den form for fængsel, han ønskede at bygge for den menneskelige ånd. Han hævdede derfor, at, eftersom man intet kan vide med hensyn til det gode eller lykke, er det eneste, man har i menneskelige relationer, love og, som LaRouche nævnte tidligere, arbitrære vaner, der er skabt over tid; og som naturligtvis kunne ændres hvert øjeblik, fordi de er fuldstændig tilfældige.

Det er altså det totalt modsatte af Leibniz' idé om stræben efter lykke. I ét af sine skrifter fremfører Kant da også, at formålet med staten ikke er at gøre folk lykkelige; det er simpelt hen at følge loven. At lykke er et rent personligt anliggende, så man kan altså have folk, der er lykkelige eller ulykkelige, men det gør faktisk ingen forskel i den måde, samfundet fungerer på som helhed, eller udvikler sig; for der er i realiteten ingen udvikling. Jeg må påpege, at Kant personligt legemliggjorde dette. Han var kendt i byen Königsberg², hvor han boede, for, at folk kunne indstille deres ur efter hans bevægelser, fordi han gjorde alting på præcis samme tidspunkt hver dag. Det gjorde han desværre i hele sit lange liv. Han var fuldstændig helliget uforanderlighed.

Lad os se på Lyndon LaRouche, om Kant [Fig. 3]. Han sagde:

»Mine mest betydningsfulde opdagelser inden for alle felter, som jeg har bidraget til, er baseret på min succesfulde tilbagevisning af det berømte Kant-paradoks, stadfæstet i Immanuel Kants Kritik af dømmekraften. Her fastslog Kant to ting, der er relevante her.

For det første, så fremførte han, at, til trods for, at skabende processer, der er ansvarlige for gyldige, fundamentale, videnskabelige opdagelser, eksisterer, så ligger processerne selv hinsides enhver mulig, menneskelig forståelse. Dette beviste jeg, var forkert, og af dette bevis udviklede jeg en fremgangsmåde for forståelig genfremstilling af disse skabende processer, og dermed den implicite målestok for teknologisk fremskridt som sådan.

For det andet fremførte Kant, på baggrund af den første antagelse, at der ikke var nogen forståelige kriterier for sandhed eller skønhed inden for æstetik. Den tolerances, som så generelt er vundet for al moderne irrationalisme inden for kunst, har beroet på tysk og anden godkendelse af denne tese om det æstetiske, som blev fremmet af Kant, og senere af Friedrich Karl Savigny.«

I parentes bemærket var Friedrich Karl Savigny ekspert i romersk lov, og han insisterede på, at man skulle genindføre eller holde sig til romersk lov i alle statsanliggender. Vi går videre med LaRouche:

»Forudsat, at vi viser, at klassisk, fin kunst er beroende på den skabende funktion af de samme, individuelle, kreative processer, der ellers er ansvarlige for skabelsen og assimileringen af gyldige, fundamentale, videnskabelige opdagelser, og kun på denne betingelse, er vi i stand til at fremkomme med gyldige konstateringer om 'menneskelig natur' ...

Eftersom al formel kundskab inden for videnskab og andre spørgsmål kun er i forhold til fremtidige videnskabelige revolutioner, rejser sig implicit let: 'Hvordan kan vi prætere at vide noget som helst?' Svaret er, at, med hensyn til den form for tanker, vi associerer med simpel irrationalitet, eller endda med metoder for deduktiv formalisme, ved vi ingenting med sikkerhed og tager sædvanligvis i større eller mindre alvorlig grad fejl i vore meninger. Hvordan kan vi da tilskrive videnskaben en blot relativt sikker autoritet?

Det, vi kan demonstrere, er menneskehedens øgede magt over naturen som helhed, pr. person, gennem disse processer, som omfattes af termen 'teknologisk fremskridt'. Det, vi på denne måde kan vise, er, at teknologisk fremskridt i denne retning, er sandhed.«

Jeg havde en behagelig diskussion med Dennis Small ved den foregående lektion, om spørgsmålet om, hvorvidt det er sandhed, eller det blot er en målestok for sandhed. Det kan vi måske diskutere lidt mere senere, men det er sjovt at diskutere dette spørgsmål.

LaRouche fortsætter:

»Denne kendsgerning placerer sand viden på unik vis i den respektive funktion af de skabende, mentale processer, ved hvilke fundamentalt, videnskabeligt fremskridt skabes og assimileres. Formelle, deduktive påstande er kun relativt sande i den udstrækning, de låner en skyggeagtig myndighed fra funktionen af, ikke formelt-deduktive processer, men af skabende processer.«

Dette blev også diskuteret i tidligere lektioner; dette spørgsmål om enten en målestok for sandhed eller selve sandheden, er relateret til denne hensigt med forøgelse af den relative, potentielle befolkningstæthed. Det vil jeg ikke gå mere i dybden med, men lad mig sige, at, i mit syn på musik og kunst, så har det, eftersom jeg har arbejdet med LaRouche i mange år, så har det bestemt altid været min målestok for et kunstværks sandfærdighed. Ikke så meget at se på dets detaljer, men at se på dets hensigt. Selv et underlødigt kunstværk er godt nok underlødigt, men hvis det opføres med en god hensigt, en hensigt rettet mod dette, kan det nå ind i dette område for sandhed.

Lad os gå videre til Schiller. I sine *Filosofiske breve* [Fig. 4], fremfører han med sine egne ord, men i nogenlunde samme retning. Han siger:

»Universet er en Guds tanke. Efter dette ideelle, mentale billede trådte over i virkeligheden, i den nyfødte verden, og opfyldte sin Skabers plan – tillad mig denne antropomorfe måde at udtrykke det på – er alle tænkende væseners kald at genopdage, inden for denne forud eksisterende helhed, det oprindelige design, at udsøge reglen inden i maskinen, enheden i det sammensatte, loven i fænomenet ...« Det er et reelt angreb på Kant;

»og føre strukturen baglæns, til dens oprindelige plan. For mig er der derfor kun et eneste fænomen i naturen: det noetiske Væren ...«

På tysk bruger han udtrykket *das Denken der Wesen* ('Værendets tænkning', eller 'det, at Værendet tænker', -red.), og det her var altså den bedste oversættelse, jeg kunne komme på.

² Indtil 1945 i Preussen; efter krigen Kaliningrad i Sovjetunionen.

»Den store sammensætning, vi kalder verden, er for mig nu kun værd at bemærke, fordi den eksisterer med det formål, for mig symbolsk at pege på de mangfoldige udtryk af dette Væren. Alt i mig og uden for mig er blot en hieroglyf for en kraft, med hvilken jeg deler en lighed. Naturens love er de koder, som det noetiske Væren sammenfatter for at gøre sig selv forståelig over for det noetiske Væren – det alfabet, med hvilket alle sind samtaler med det mest perfekte sind blandt dem ...

Harmoni, sandhed, orden, skønhed, excellence fryder mig, fordi de fører mig over i den aktive tilstand af deres opfinder, deres ejer, fordi de forråder mig til tilstedeværelsen af et empatisk, ræsonnerende Væren.«

Hermed vil jeg gerne fortsætte med musik. Her vil Lyn tale for sig selv et øjeblik.

(Lyndon LaRouche): »Den fejltagelse, der oftest begås, er den antagelse, at synssansen har en tilsigtet [kan ikke høres; 25:12] og høresansen har en anden mening. Det, vi for længe siden rent faktisk burde have erkendt, er, at hverken syn eller [kan ikke høres; 25:29] og har samme vildfarelse som videnskabelige instrumenter. Det er kun, som jeg har placeret tilfældet med Helen Keller, kvinden, der fødtes uden syn eller hørelse, og hvordan hun var i stand til at udvikle en fornemmelse af socialt rum, fysisk rum, uden syn eller hørelse. Det er en demonstration af, at det menneskelige sind er et instrument for viden, ikke sanserne. Hunden, der snuser til noget, er måske ikke den rette fremgangsmåde, at følge hunden i ens fremgangsmåde. Man beror ikke på sansevished; det er det menneskelige intellekt eller sind, der er vigtigt. Opdagelsen af fysiske principper er et eksempel på dette; virkelige fysiske principper.

Det er f.eks., Galileo – en svindler og bedrager. Galileos indflydelse; han var en slags ypperstepræst for Paolo Sarpi med at udvikle dette vanvittige empiriske system, bruger én metode. Men Kepler bruger en anden metode. Keplers ting, især mht. spørgsmålet om den såkaldte Tredje Lov, harmonierne, erkender, at der er et andet sanseorgan end enten syn eller hørelse, som udtrykkes i universets love. Der er noget, som ikke er nogen af delene. Det er det, han kæmper med i sit arbejde med spørgsmålet om Solsystemets organisering. Der er mange andre aspekter af dette. Pasteurs arbejde peger altid i denne retning. Vernadskij fortsætter Pasteurs og andres arbejde og peger i denne retning.

Ud fra standpunktet om Riemanns fysik, i modsætning til Descartes' tænkning, er dette ret indlysende for en person, der har arbejdet i dette felt. Men problemet er den rolle, sansevished (dvs., man kun beror på sanserne for vished om noget som helst, -red.) spiller; og det viser sig i dårlig smag mht. musik. Folk, der kan lide rockmusik, er selvfølgelig inkompetente som videnskabsfolk, og jeg mener, det er, hvad der er galt med meget af vores videnskab. For hvis man ikke forstår, at høresansen er et

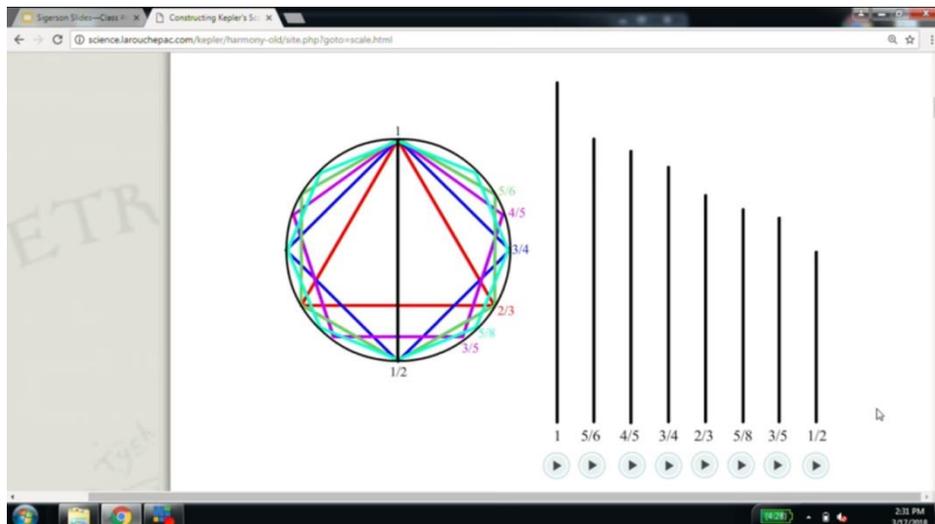


Fig. 6.

afgørende, videnskabeligt instrument, som et eksperimentalinstrument; at syn og hørelse er videnskabelige instrumenter, der kommer i æsken sammen med vores krop. Men de er altså blot kroppens instrumenter. Det er menneskets sind (intellekt), der gør opdagelser. Og i menneskets sind er der ingen forskel på klassisk kultur og videnskab; de er én og samme ting. Det ene ser på det ud fra aspektet om samfundsrelationer som sådan, og som er kunst; og det andet ser på det ud fra standpunktet om menneskets forhold til den fysiske verden, som det agerer i. Den adskilte tvedeling er problemet.«

Sigerson: Keplers Universets Harmoni (*Harmonices Mundi*) er et utroligt værk, og jeg kan stærkt anbefale folk at arbejde med det. På LaRouchePAC's webside har vi en utrolig mængde materiale, der kan hjælpe folk igennem dette totalt skelsættende værk, for, hvis man troede, at det var Galileo, der faktisk opdagede planeterne baner og så videre, som LaRouche sagde, det er et totalt bedrageri. Kepler er begyndelsen til reel videnskab; ikke blot inden for astronomi, men også inden for videnskaben om den harmoniske organisation af universet som helhed. Det er et smukt værk. Jeg kan kun omtale en ganske lille del af det, for at give jer en idé om den måde, han arbejder på. Det vil sige, fuldstændig fra oven og ned, gennem en række af tilnærmelser, begyndende med enkel geometri og fortsættende med tredimensional geometri – solid geometri; men dernæst arbejdende sig op og ind i organiseringen af hele Solsystemet ud fra standpunktet om musik, og musikalske skalaer. I har hørt om ideen om sfærens musik; det er en gammel idé, Platon havde, men Kepler gennemarbejdede det virkelig.

Jeg vil gerne vise en blot første tilnærmelse til dette. Her kommer vores første ting [Fig. 5], hvor han viste en cirkel og arbejdede sig igennem, hvordan man kunne konstruere forskellige polygoner inden for cirklen. Dem, man kunne konstruere, beskrev han som »begribelige«; dem, man ikke kan konstruere – såsom heptagonen, polygonen med syv sider – er ikke begribelige på denne måde. Han udarbejdede en slags hierarki, og her er vi, at vi har diameteren; den næste, man ser, det er en firkant, det ser man. Firkanten, der deler cirklen i fire, og der er trekanten, der deler den i tre. Og så fremdeles; pentago-

nen, heksagonen. De definerer bestemte forhold. [Kan du køre videoen, så den viser, hvordan det udfolder sig? Megan, der det muligt? Megan: Jeg har ikke den video.]

Nå, men hvis I forestiller jer, at man tager i toppen, hvor der står 1, hvis man tager cirklen, som om det var strengen på et instrument i toppen, og man ruller den ud. Og hvis man bruger disse samme forhold, vil man få at se, de samme forhold langs højre side. Megan, kan du spille et par af disse intervaller, begynd med ét, og så den halve over den næste, og et par af de andre, så folk kan høre disse forhold. [bas spiller en oktav] Det er den halve, og hvorfor spiller du ikke to tredjedelen? [bas spiller en femtedel] Det er det forhold i musikken, kendt som femtedelen. Prøv så fire femtedele. [bas spiller en tredjedel] For de af jer, der ved lidt om musik, så genkender I det som en stor tert. Jeg vil ikke gå igennem alle intervallerne, men I kan se – dette er ikke unikt for Kepler, men spørgsmålet er, hvordan man konstruerer en anvendelig skala, en skala, som kan synges, men på en præcis, konstruerbar måde med disse konstruerbare polygoner. På den næste grafik [Fig. 6], på højre side, som er fra Keplers bog, og man har disse forskellige forhold, som han arbejder igennem med hensyn til disse skalaers indbyrdes forhold. Kan du spille den øverste, for blot at få en idé om, hvad det er? [bas spiller do, so, mi, do] Som I kan høre, så lyder det som en lille arpeggio, der går nedad. Han gennemarbejdede dette.

Her følger engelsk udskrift af resten af webcastet:

Theres a lot more that could be said about this, but what I want to skip to immediately, is to a certain kind of paradox that immediately comes up when you start working with the scale. Namely, that in nature, especially when you're dealing with the plane figures and plane geometry and whole number relationships, these are only reflections of what really goes on in nature. As Nicholas of Cusa argued, nothing in nature is actually perfectly exact. That is, you can't have an absolutely perfect circle; there's nothing that's so perfect that it couldn't be more perfect, in reality. For instance, that's how Nicholas of Cusa, who was way before Kepler, even argued that you could not actually say that in the Solar System there was a perfect center and that everything was a perfect circle; because it would have to be a little bit off. He didn't discover what Kepler did, which is that the orbits indeed are elliptical to one or lesser degree. But he already had that idea. The argument here is that nothing in the physical world can be absolutely exact; you're always talking about approximations. And indeed, what we have to do in the real world, is come up with an approximate scale that is able to work with music. And later on, as we'll show with Bach, that also can be modulated through various musical modes.

The most basic paradox we have though, is the one of how to tune the scale. This is something that I'm just bringing this up as a way of indicating to non-musicians what the issues are.

So, let's take this issue of the Pythagorean comma [Fig. 7]. So, we take this interval which is 3 over

2, which is, as I mentioned before, the fifth; the musical fifth. I'll just play a musical fifth again here [plays fifth on piano]. Although on the piano, it's already a little -- it's not actually a perfect fifth, it's a little bit different. But for practical purposes, let's think about that as a three over two relationship. If I take the lowest C on the piano [plays C], and then I take G [plays G] and proceed, another fifth [plays D], another fifth [plays A], another fifth to E [plays E], another fifth to B [plays B], another fifth to F# [plays F#], one to C# [plays C#], G# [plays G#], D# [plays D#], A# [plays A#], E# [plays E#], then the top note on the piano [plays C]. That's B#, but B# is the same on the piano as C. And indeed, if you take that, and you take it seven octaves down [plays octaves]; they should map, but they don't. As you can see pretty intuitively, if you take the 12th power of 3 over 2, you're never going to get to some multiple of one, or one, two, four -- you're never going to get to that. And I just worked out the mathematics here. You see 3 over 2, you get this fraction -- 553,441 over 52,488. If you take C as 52,488 over 52,488, you can see that there's a difference there. It's 953. So, in other words, B# is 953 higher. This is known as the Pythagorean comma, and it has been known for a long time. There are other kinds of commas, depending on how you go through. You can build it on fourths, you can build it on various intervals and also intervals where you go up and back down. But, you're always going to get these kinds of discrepancies.

That amount, by the way, happens to be in modern measurements where they measure 100ths of an equal tempered interval, it works out to 24 cents, or 0.24 of an interval. So, the question is, if you want to have a workable scale, you're going to have to find some way of chopping that up. There were all sorts of huge discussions about that, and there still are.

But the problem with it is, of course, that this is still not really on the right level. Kepler was aware of that because of a sequence that he went through in terms of working these things through.

Now, there's another higher order domain that you can look at the whole issue of, and I'd like to just to ... Let's look at the way Bach dealt with this. He did this in his {Well-Tempered Clavier} in practice; because in the {Well-Tempered Clavier}, he has 24 preludes and fugues, each of which is in a different key. That is, C major, C minor, C# major, C# minor, each one going up and it works out to 24. At the beginning though, he showed this frontispiece [Fig. 8] here which you see. You see that sort of curlicue at the top. For many years, everybody thought that was just a kind of an ornament there. It sort of looks nice and so forth. But recently, there was musicologist named Bradley Lehman who took a really close look at it, and realized that there's something much more interesting; and maybe there's a method in all of these curlicues up there. Let's look at the next one [Fig. 9]. He turned it upside down; and if you can see, the second from the left, that little curlicue had a little "c" next to it. What this is, and each of these curlicues, you can see the one "C," "G," "D," "A," and "E," have sort of a double loop on it. Whereas, the next ones don't have

any loop, and the next ones have a different kind of loop. Then, there's a separate little loop right at the very beginning all the way to the left, because from A#, then it's another fifth which goes up back to the F. He starts it on F, rather than C; but it's the same cycle. This is Bach's shorthand for how he adjusted his instruments for being able to play in all of the keys. Now some people would argue, "Well, OK, this is still not really equal tempering," and indeed, it's not; because equal tempering means you just set mathematically -- you can write a mathematical function to chop up the Pythagorean comma, and put equal amounts of it in each one. But in practice, you can never do that. Even a regular piano tuner knows that you can't tune a piano in perfect octaves; it'll sound terrible. You have to make adjustments in the real world. So, these were his kinds of adjustments.

Now, let's look at an even higher approach that was suggested by Lyndon LaRouche on the basis of his work with Gauss and Riemann [Fig. 10]. Lyndon LaRouche shocked audiences in a conference back in 1980s when he got up and said -- we were expecting him to give a big discussion about the political situation of the time. Instead he said, well what you have to understand is the way the universe works. The only thing that really exists in the universe is circular action. OK, circular action. Well, but it's also not just circular action; it's what's called multiply-connected circular action. In this graphic, we're simply moving, twisting the circular action around itself one way, and we're getting a diameter. Then, you're twisting it around another way, and we get the center of the circle there.

Let's look at the next graphic here [Fig. 11]. Just to get an idea. Circular action as you can see, doubly self-reflexive circular action, and triply; spherical circular action. If you work this through, there's a whole different way you can represent the musical scale. Go to the next one [Fig. 12]. If you see, there's a spiral on the cone. If you work on conical spiral self-similar action, you actually get various means which approximate the relationships of the fifth and the fourth especially. Go to the next one [Fig. 13]. Here you see again, the geometric mean and the arithmetic mean. You can see it's generated through this spiral action. Next [Fig. 14]. You can see here that if you take this spiral action and you map it onto the Solar System -- these are the inner planets. You've got this very interesting, big band around the Asteroid Belt. Again, I'm not going to go into the details of this. This has to do with the way Kepler calculates the ellipticity of the orbits of the planets at their apogee and their perigee; but essentially you get a very interesting singularity right at the Asteroid Belt, which Kepler was very concerned about. He puzzled it through. But it was really only much later, in the turn of the 19th century, that the great mathematician Gauss, in working on his work on finding the orbit of one of the major asteroids, Ceres, that he realized that the Asteroid Belt was uniquely located in this area of F#.

Now, why is that important? Well, it has to do with the fact that in reality, this is a human question as well. The F# happens to be the human being's basic reg-

ister shift, the shift of registers. And without saying a lot about that, I would like for us to read through something that LaRouche says about that, on a work which he called "On Scientific Tuning and Beauty of Classical Composition," which he wrote in 1988. [{EIR}, Aug. 12, 1988]

He said: "The classical composer's song reads the poetry with emphasis upon the verb, rather than the noun. Emphasizing the noun suggests an erotic interpretation of the poetry or music, rather than the emotions of 'agapë/ caritas,' which are the natural emotions of the creative mood of concentration.

"The most singular experience which put me on this track in music occurred at the end of the war, while I was in India, awaiting the voyage back to the United States and demobilization. Starved for music, I found an HMV recording of Wilhelm Furtwängler conducting a Tchaikovsky symphony; for the first time, I heard Tchaikovsky performed as if it were music! It was my first encounter with Furtwängler; it was electrifying. I became obsessed with the desire to discover an intelligible explanation for the difference I had heard, in a more general way. The view of the classical song as the 'Rosetta Stone' of music supplied that intelligible explanation."

Further along, he says: "My thesis on this subject was more or less completed a quarter-century later. By 1979, I was exploding with dissatisfaction over my friends' musical investigations, and insisted that we must shift emphasis away from study of the matter in an instrumental context, and ground all investigations in the principles of the human voice. It became increasingly obvious to me, through fresh investigations of the implications of a beloved old friend of my youth, Mozart's K. 475, that the principles of a C = 256 (circa A = 430 [Hz]) well-tempered tuning, were used in the songs of Mozart and Beethoven as a characteristic voice-register passing, for a poetic purpose. The same principle is evident in their instrumental compositions. Unless we lower the tuning to the level at which the soprano naturally passes on this value, we compel the singers to misinterpret the works (as to ruin their voices by shouting), and achieving similar sorts of undesired effects. ..."

OK, we're going to say something about that in a second, but let's go on.

"I examined myself, to the purpose of recognizing more exactly the distinction between those emotional states which foster extended creative concentration-span, and those of a contrary or indifferent effect. So, I recognized that the emotional correlative of creative concentration is a 'fundamental emotion' contrary in nature to the erotic emotions of lust, anxiety, fear, hatreds, and rages. This 'fundamental emotion' is the same identified by the original Greek New Testament as *agapë*, the emotion associated with love of God, love of mankind, love of truth, and love of beauty as classical aesthetic principles define 'beauty.' Once this distinction had been made, I was able to use my recognition of precisely defined emotional states in myself to guide me in isolating those aspects of musical compositions which coincided with the strongest resonance of these emotional

states. For example, I cannot hear the two opening sections of Mozart's {Requiem} well performed without experiencing tears of joy. I came thus to understand that the spark of creative genius in a great composer, as distinct from mastery of music as a language, is the composer's acquired confidence in such agapic emotions. ...

"It became obvious to me that agapē is not merely an 'emotional state,' as 'emotion' is usually defined. The emotion we associate with agapē is a form of intelligence, and is, indeed, an integral, inseparable aspect of the quality of Reason. It guides us along the upward paths of discovery and related decisions, and so appears to the composer or performer habituated to its joys as a more or less infallible 'musical instinct.'"

Well, this really brings so many different strands together, I can only go through some of those strands. But first of all, he mentions Wilhelm Furtwängler. One of the listenings that I assigned was one of the movements of that performance of Tchaikovsky's Sixth Symphony, his Pathétique Symphony that Lyndon LaRouche heard in the late '40s. It was actually performed in 1938. And if you compare it to other performances, and try to listen to it through Lyndon LaRouche's ears, you will learn a lot about this.

The other thing he mentioned is Mozart's Fantasia in C minor, K. 475. Can I have the graphic of that, just so you get an idea of this. I'm just going to play the very opening [performs opening as shown].

This opening, this very beginning right here, [performs] is fascinating, because it deals with so many of the singularities for you, in the musical scale from the standpoint of musical registration. This, that F# there is precisely the register shift of the sopranos, and the child's voice. And the E# here is the register shift of the alto's voice, but in the opposite direction.

Let's look at this: This is material that you might call the "C minor series." We'll look at some other pieces in a bit, related to this. Let's just look at the way that Bach was looking at exactly the same material. Could we have the next slide? This was part of a theme that is said to have been given to Bach by Frederick the Great, but I have my doubts. I think it may have been given to him already, and I can't believe that it was just Frederick that give this theme to Bach to work on.

[Performs theme from Bach Ricercar] That's your soprano register shift, then alto shift. And I think one of the assignments that I gave in the class was to listen to the Three-Part Ricercar wrote on this basis on the Musical Offering, so you can go back and listen to work that through.

The next part that I'm going to play for you is an interview that we had, with Renée, my wife, and Mindy Pechenuk, and I had with Lyndon LaRouche while he was in prison. To give you an idea of all of the different dialogue of the composers that Lyndon LaRouche is thinking about -- and I'll say a little bit more about that later -- but I just want to point out that these pieces that he's referencing in this next section, are the following: He says Opus 111, and he's talking about Beethoven's piano sonata Op. 111; he talks about Mo-

zart's Adagio and Fugue, and indeed, that's what it is, and the Kershel number is K546. He talks about the K475 Fantasy which I just played a little bit of; he talks about Opus 102, which is again is another sonata by Beethoven, but this one is for 'cello; and he talks about the 106, by which he means, Beethoven's famous Hammerklavier sonata, which is Op. 106. And then he talks about the Brahms, and he's talking about Brahms' Symphony No. 4.

These works are seminal works, which everyone who wants to learn anything about musical ideas should begin to study. But let's listen to Lyn: [audio recording]

LYNDON LAROUCHE: It's like a test, you can quote somebody. If you quote somebody, can you quote them competently. You get, by what Mindy was doing with this, then we go on to Beethoven, with his symphonies and to Mozart, from Haydn. You take all the C minor and related material, and you find out how much they're quoting themselves and quoting each other. Because these are actually the elaboration, just like science, it's the elaboration of a few ideas; keep working on these. And if you look at musical composition, Classical composition, as a scientific activity in this dimension, this Aleph domain, then you understand it.

Because it's the science of discovery, of musical discovery, and its genuine discovery. For example, you have Beethoven did the quotation of Mozart in the form of the 111, which is two quotations of Mozart. It's combining Mozart's -- as he did later with the {Grosse Fuge} -- combining Mozart's Adagio, the fugue in that, and the [K]475. It's combined. There are two things, the two ideas that he's working on, very intent at that period from the 102 on. Which you're familiar with the 102 [addressing Renée Sigerson, a cellist]. You have exactly that in there in the fugal part, this Mozart quotation that's in there. Because Mozart's a genius, obviously. He discovered how to do Bach fugues and became a genius at it instantly, within the year. He just became totally absorbed with it. And Beethoven's fascinated with this business of Mozart doing that, since he knew about fugues, but he didn't know it this way -- the way Mozart taught him. So you get that.

Now, so -- in the same way, you get the same effect as the 106. In the center of the 106, it starts with a march, and he gets an idea of doing something with this march, which he re-does as the first movement. And does the last movement -- the last movement is the same business, the fugal business.

Now, then you go to the Adagio sostenuto. In the Adagio sostenuto has something in it, which is very much related to this two-note pattern, which you later find in Brahms in the Fourth Symphony, the first movement. They did a very specific kind of Motivführung concept, to reduce everything to pairs of notes, which Beethoven does in the last quartets, by dividing the voices across the instruments, dividing the thematic material across the instruments. Which is what you get in good orchestral composition... [end audio]

SIGERSON: Don't worry if you didn't follow everything that we referred to here. We're going to come

back to some of these things. When he's talking about these two-note ideas, let me just play just the very opening of the Adagio sostenuto, from the Hammerklavier, just so you get just a flavor of it, which is that -- Beethoven, when he originally composed this, he started it like this [plays example]. And it creates an entirely different idea of the entirety of the whole piece. It pulls together the unity of that entire composition.

Let's move on to some other aspects of this. I wanted to point out that, as part of these discussions with LaRouche in the 1980s, we decided to put out a book, which I was the coauthor of. It's the {A Manual on the Rudiments of Tuning and Registration}, Book I; many of the discussions we had with LaRouche were actually about Book II, which has never been produced. Maybe one of these days, we'll produce it.

But this book works through the vocal side of this, from the standpoint that the only real resolution to a lot of these problems of musical tuning and so forth, cannot be resolved from the standpoint of instruments, that is, physical instruments -- pianos and so on. Because the human body and the human voice itself is of a higher order. The nature of the human mind actually reorganizes the nature of the way that the human body functions, as well.

And the human voice has register shifts, as well. Could we show a couple of figures here? [photo of the Florence Cathedral Duomo] Just to show, this idea of registration and beautiful singing, actually was a product of the great Florentine Renaissance. This is the dome of the cathedral, which was based on the principle of the catenary, which is a non-mathematical curve, and was a {major} -- it was like the Moon shot of that period.

But, inside of it, as the next slide shows, you will see that there a choirstall, which is called the {cantoria}, which was done by a sculptor, Lucca della Robbia, showing singers singing, and what's fascinating about it, which a friend of Mr. LaRouche -- José Briano, a singing teacher, who passed away two years ago -- noticed something in the way that the singers were singing; next slide [closer detail of {cantoria}] -- he pointed out that by looking at these singers you actually even figure out which register they're singing. And he also noticed that the way that the singers are singing is with very round singing, and this was really the advent of what you can call the Florentine bel canto way of singing.

It's quite different from older ways of singing -- I think the next slide shows something like that; no, that's simply the same idea, and also the children's singing. But you can see the various positions of the mouth and so forth, it's very scientifically worked through. And the next one: This is an older altarpiece, and you can see these are singing in a rather different way. You can see they're all scrunched up, they're sort of singing as if they -- they're singing through their nose basically. And it's not that kind of bel canto singing. So the Florentine way of singing is really a complete breakthrough on that.

Let's just go through a little example of this question of tuning. Next slide: Here's just a basic run-down of the way the registers work for the six basic type

of voices, that is, soprano, alto, contralto; and then you have bass, baritone and tenor, which I don't think we have. Just to show where the organization of the way that they shift. As the {Music Manual} explains, all of the great composers wrote their poetic interpretations, their vocal music from the standpoint -- but not just the vocal music, all of their music -- from the standpoint of these registers, {if} you work the tuning at C=256.

Next, this is just to show (I don't want to discuss it too much), that if you look at the right hand of the first register, you'll see that at 256, the register shift is between the F and the F#; whereas in the higher tuning, which is in the second, the bottom line, there, you see that the shift between the first and the second register doesn't fall there, it falls between the E and the F.

So this F is really critical, and this is the reason why we started a campaign, which was signed on by pretty much every great opera singer and also instrumentalist, during the 1980s and early 1990s, to get the pitch back to the point where the register shift is at the right place, because otherwise, what it does, it forces a strain on the voice when you try to use higher tunings.

Let me just demonstrate that with one little piece. Next: This is from Verdi's opera {Aida}, "Celeste Aida," the famous opening aria, by [the character] Radames. And [plays it], it just goes right onto that top F; that top note there is the F. My piano is tuned at the lower tuning, and so it works just fine, because the question is that top note, how well you can sing that. [Sings] It's great, absolutely great.

The problem is, if you make the tuning higher, it doesn't quite work. Next slide. Oh, I had the wrong slide, sorry about that. Here's F on my piano, and here's F, when it's tuned at A-444. Hear the difference? It's not quite a half-step, but it's significant. I'll try to sing that same piece, but in the higher tuning. [sings] Essentially what you have to do, is you have to change, you're almost singing that as if it's an F#, -- either that, or you have to scream it.

So, many of the greatest singers realized that LaRouche really had something here, and they joined with him, and we had a number of conferences about this tuning question, in the late 1980s, and he was joined by great musical artists such as Bergonzi, Piero Cappuccilli, Renata Tebaldi; and I'd like to show you a clip now of the opening of one of those conferences, where Lyndon LaRouche speaks, and describes what he views his role in this is. [video]

LILIANA GORINI: [Introduces LaRouche in Italian and asks him a question] How can the Schiller institute and you, with this international campaign, change the attitude of the music world on this question of tuning?

LYNDON LAROCHE: Well, it goes to a deeper question. That, in my position, my specialty is a branch of science called "physical economy." I recognize, as few have recognized, that the development of music in Europe, Bach, and especially after Bach, Mozart, through Verdi and Brahms, this school of music, plays an essential part in the very functioning of a culture. There's

a certain relationship to the creative powers of mind with this music, which does not exist in the other form. We're in the danger of losing not only the music, but civilization right now. Therefore, I thought it urgent to try to preserve the distillation of those principles of music which were essential to our culture, and to look at these principles known to musicians from the standpoint of science, so we can educate a new generation of teachers. [end video]

SIGERSON: Now, exactly during this time, Lyndon LaRouche also developed a very close personal friendship with one of the century's greatest violinists, Norbert Brainin, who for four decades, was the first violinist of the Amadeus Quartet, string quartet. In discussions with LaRouche, along the lines that we've just been discussing, Norbert Brainin realized that something he had been thinking about for a long time, completely just gelled, and it was this idea of what he called {Motivführung}, which in English is best translated as "motivic thorough composition."

Which we talked about, I referred back a little bit earlier when we talked about that two-note opening of the Adagio sostenuto of the Opus 106. But to introduce you to Norbert Brainin, who was a wonderful, wonderful person, let's just run the first part of a series of seminars that he gave, devoted to this topic. [video]

"Motivführung: Master Class and Demonstration"

NARRATOR: In September 1995, the Schiller Institute, at the Dolna Kurpa castle in Slovakia, held a seminar with Norbert Brainin on Motivführung as the key to understanding the method of composition in Beethoven's string quartets.

NORBERT BRAININ: I am here, actually to illustrate Motivführung. It is close to my heart; I've carried it around with me for a long time and it never really resonated with anyone else; and the only person who immediately understood it was Lyndon LaRouche, and that is the bond between us. The contemporary researchers, they absolutely don't understand it, the Mozart and Hayden researchers, they absolutely don't understand it. They notice it, they know it exists, and have also written about it, but beyond that, they don't deal with it at all.

NARRATOR: The seminar began with Beethoven's String Quartet Op. 59. No 2, which is dedicated to the Russian Count Andreas Rasumovsky. [performed by the Moysez Quartet, Bratislava]

BRAININ: Thank you. Thank you.

Please, I want to show you how the piece begins with these two chords... That is the principal motif of the entire composition. And everything else that follows is a variation... Please play that once more. [They perform]

Good, keep on playing, please. That's something that Beethoven does quite often: a half-step upwards, or downwards, for the modulation. That stands him in good stead, later on in the composition. And now we come back again, by means of this diminished chord, and we're back in the main key.

Do you hear that? This becomes a very special motif. Also out of the variation of this, arise new motives, which are employed in the composition. And this [demonstrates] ... is very important, this comes up often.

Play again ... from there, please.

Good, now please play ... You [indicating the violins] just play it alone, only these two measures. Good. Now play yours. Good. Yes, you, too, please. OK? At that moment, only these three participate, not the 'cello; that comes later.

You see, all of these three variants of the opening are played immediately at the same time. They are all equally important; there is no accompaniment or some such in it. And it all must be really sung. [end video]

SIGERSON: [laughs] You'll notice that Dr. Brainin points out that all motivic thorough-composition was implicitly polyphonic, i.e., with the advent of the Mozart-Haydn revolution, which occurred during the period around 1780-1783, when Mozart had just an explosion of discovery because the works of Bach had been brought to him from Berlin -- he hadn't had exposure to many of them before -- that with this revolution that happened, and also Haydn was involved in this, the shackles of any strict separation between any melody and accompaniment, or melody and what at that point was called basso continuo, was completely thrown off. That therefore, also, you could have a juxtaposition, but also an inversion of thematic elements as well. And this kind of principle of inversion also expands the mind, so that you can grasp a principle of the composition, and not the specific "thing" in the composition.

And I just want to give one little example here of something which was implicitly part of this, even though it was earlier, it was by J.S. Bach, in 1721, which was a little canon that he composed as a gift to a friend of his, Ludwig Hudemann. Can we have that? Here it is -- now, what? Oh my goodness, what is that?! Well, this is why it's called a "puzzle canon." And as you can see, over at the left there, there are four different clefs -- those little squiggly things -- and then something more familiar is the bass clef. But then also on the right, you see upside down, four other clefs within different notes.

Well, this was a puzzle, which was not all that difficult to figure out, but there are a couple of different solutions, but the main solution is the one that I will show next -- here -- and I had my chorus sing each one of these voices and we can put it together and you can see the way it works. It works on the basis of this rising fourth [plays it], which is really like the Motivführung of this whole idea.

And this rising fourth is a fascinating interval to me, always has been, because keep in mind that the rising fourth, is the inversion of [plays] -- or actually, you can think about it the other way around, that this [plays], going a fifth up, that's the inversion of [plays] going a fifth down. And that's what this canon is based on, is this idea.

So why don't you play, in sequence, Megan, the four different voices going up, and then play it all together. [plays audio of voices of canon]

But then, on the right side of the original one, you saw all those flats and so forth, and this was, if you look at it, if you turn this upside down -- you can literally just take the sheet and flip it over, instead of going -- this [plays], right; that's C major. If you take exactly those intervals, which is whole step, whole step, half-step, whole step; take those exact intervals and you take it going down from C -- whole step, whole step, half-step, whole step -- you get, instead of C major, you get F minor.

And, for time reasons, just show the score, and then let's just do it all together, rather than the individual voices. Now, of course, the original one started with the sopranos going up. And now this one, you'll is the basses going down, and so it's a falling fourth, rather than a rising fourth. Let's just have all four doing it. [plays audio]

Great. Now, LaRouche's breakthroughs during this period, also, obviously did not just extend to the musical domain, but also this was happening at the same time as he proposed the Strategic Defense Initiative, based on new physical principles, for a mutual defense that would be engaged in by both the United States and jointly with Russia.

This was sabotaged by British operations, which resulted in LaRouche's conviction and jailing. And it's very interesting now, with Putin's March 1st address, many of the aspects of what LaRouche was initially proposing are now being offered by Russia to the United States, unless the insane British prevent that from happening, which they're going crazy over right now.

But, when LaRouche was thrown into prison, Norbert Brainin, whom you heard earlier, jumped to his defense, and gave a number of benefit concerts for his legal defense, and I'd like to show you a little bit of one of those. This was done at Georgetown University in Washington, D.C. [video]

NORBERT BRAININ: Ladies and Gentleman, my dear friends: I just want to say a few words. You see, we are here tonight, with my friend, Mr. [Gunter] Ludwig [pianist] and I, to pay homage to a great man. We are here to bear witness to his stainless character, to his honesty. I know that all these things will resolve themselves, and his character will remain as stainless as it is now.

But there is another reason why I am here. It is because I'm a friend of the United States of America. I love the United States of America. God bless America! [applause] [perform piece for piano and violin] [end video]

SIGERSON: Next, I'm going to play what I consider to be a core part of this class, which is Lyndon LaRouche's instructions for an entire curriculum, which I think, if you want to know where to start with music, this is the place to start. If you can work through every single example that LaRouche is about to mention, -- and this was done as part of this interview that we had with LaRouche in prison, in January 1993.

I would just point out, that when we walked into the prison, Mr. LaRouche was bubbling with enthusiasm about one of the greatest chorus works that's ever

been composed, Beethoven's {Missa Solemnis}, his Solemn Mass; which is a monumental work. And we asked him, "are you listening to a recording of it or something?" He said, "No, no, I don't have a recording." We said, "well, have you been studying the score?" He said, "No!no-no! No, I've just been working it through in my head."

We were flabbergasted, because he knew this piece, this {Missa Solemnis}, and he'd been running it through his mind, while he was in prison, better than any of us who were sitting in the room, I can tell you that.

But in this following excerpt, he's going to mention a number of other works, which I want to list, so that when he mentions them, you'll have some reference point. But, as I say, this is the kind of thing that you should really go back and listen to, many times, and work through and figure out exactly what he's talking about in every single one of these cases.

He mentions Beethoven's Ninth Symphony, especially the fugato, which is a fugal section, which is just with the orchestra leading back into when the chorus comes in with the famous finale of the Ninth. He talks about Beethoven's Esterhazy Mass, by which he means Beethoven's Mass in C, which our chorus is just about to perform part of in a concert on April 9th.

He talks about the Council of Trent, which was a major Church council in the Catholic Church between 1545 and 1563, which was one of the most reactionary and stupid councils, which really sealed the division between Catholicism and Protestantism, at a point at which the church could have actually been unified, as some were trying to do.

He talks about the Beethoven String Quartet Opus 130; he again refers to the Opus 106 Hammerklavier, the Adagio sostenuto, which I've already played you part of. He talks about Brahms's Fourth Symphony, which is intimately related to that. And then he works through this concept of Motivführung. So, with all of that, let's play this.

[audio]

LYNDON LAROCHE: One of problems is how do you make your pedal point music, and you make it a voice, eh? But the spreadings, remember, because you're in concerto form -- you're in concerto form. You've got an orchestra, in that moment you've got two voices; you've got the monitor [ph] is carrying a voice, and you've got a mezzo. The question is to maintain transparency. And how do you do that? And that's what my criticism is, in thinking this through. And also things, in this fugato passage, which leads into the Agnus Dei. And how do you keep that from --

Now they do the same thing in the last movement of the Ninth Symphony, with this long fugato section is used, and they get raucous and they lose transparency. And because they hate polyphony. They want to eliminate the polyphony.

And the characteristic of Beethoven, you see this in the Esterhazy mass, the C Major, again, the polyphony has to be emphasized, otherwise, you try to make it a Romantic interpretation, and you {ruin} it!

Then you can play it at an elevated pitch, and make everything impossible because you're trying –

And just think about this constantly in passage work: Think of a passage in which there's a register shift indicated for the voice. If you perform and articulate to get the register shift, you achieve transparency, by virtue of something happening in that voice. One of the effects of register shift, is give the voice identity. Without that discontinuity of the register shift, it's hard to get that. How do you do it with a string instrument? It's when you change your string, or change your bowing, to get a different register quality in the passage, that you get that. You get the voice is now obvious, to the mind!

RENÉE SIGERSON: It has a coherence....

LAROCHE: Otherwise it's just blah! So, if you want voices to stand out, you have a voice doing something, against another voice which is doing something, another voice which is doing something, which is the polyphonic idea, which is what the Council of Trent complained against. No polyphony. This is Protestant fundamentalism: we're reading the Bible text to the uninitiate; you want them to understand and chew over the interpretation you [inaudible 1:40:00]. [laughter] Which of course is absurd from the standpoint of the Mass at that time, because the Mass was performed with the music, you had the vocal part of the Mass, the recitative, and then you had the same thing was done as a musical apotheosis of the vocal recitative. And everybody knew what the words were, because they had the recitative!

And the same thing is true here, in case of this, this particular work, the Benedictus. And you compare the Benedictus there in Beethoven, obviously, with the Benedictus in the Mozart {Requiem}. Completely different treatment of the word. The poetic treatment, it's different, it's the opposite. It still has the dotted rhythm, but it's different. The emphasis is on {dictus}, not {ben}.

And makes a completely different completely different composition, which leads then into the Agnus Dei. And you're led to it, very nicely, by this fugato -- leads to it. And you have typical Beethoven, an inversion of the Credo statement, he inverted it, dramatically. Beethoven repeats the statement -- typical Beethoven.

But to get back to the other business: You go to the 106, the last movement is all this material in the double fugue, really fascinating. The more you get into it, the more fascinating things there are there. But then, go back to the --

And then, of course you have this two-note pattern, which starts from the opening of the first movement, all the way through. This is emphasized by this little improvisation which precedes the last movement; then the two notes which are stuck in an afterthought to enhance the Adagio sostenuto.

Now: {Go through the development}, of the Adagio sostenuto, and you find the root idea which is used and ordered by Brahms to create the opening of the Fourth Symphony. You see, it's there already, but that is an anticipation of what comes up in the development, and the whole thing is based, the [Opus] 106 is based on these two note patterns, the opening statement, right?

Forget the thematic statement. Beethoven, in his late period, you've got to go down to elements of this, like the two notes; you've got a phrasing, you've got a long idea, but it's composed of these elements, and what he does is, he uses these elements, these parts, and he plays them against other parts, and he does things and he echoes them.

And the interpretation is key on this. You've got to recognize that he's doing this, when you perform it, because you've got to make the listeners mind hear it! You've got to make the opening heard, when those two notes which are stuck in, in the beginning of the Adagio sostenuto are performed. They've got to hear and echo of the very first two notes that they're hearing in the opening of the first movement.

Then you get the way the paired is done in the improvisation preceding the last movement. There's a pairing of paired notes, which gives you this progression, which defines the domain. Then the same thing is done in the opening of the fugue itself, the same pattern. And you have to watch these and the differences among them, because that is how the musical idea is developing --

that's your Motivführung. Your Motivführung. Your Motivführung is reduced to this question of -- you see, the problem is if you want to do a really good Motivführung, you've got a problem, because you've got to work on three levels, minimum. You've got to work on the level of the thematic material, and its pedal point progression. Each piece of thematic material has its own pedal point progression.

Now, each movement has its pedal point progression, which is tied to its key tonality. Then, all of it has a pedal point progression, which assumes the pedal point progressions of each of the movement. The pedal point is key when you're composing; the pedal point is the key to the Motivführung. Once you've got the pedal points in relationship all your voices are going to be in nice relationship.

Because the pedal point serves as what an equivalence represents with Cantor, and it works like Cantor -- that's what's so interesting about Cantor and Bohm and so forth, and the fact that he was a violinist, and that his specialty was the late quartets of Beethoven! So these things sort of go together. [laughter] Because it's an equivalence. What we're hearing in this fundamental difference which we get, which to me was obvious with the earlier Mozart and the later Mozart, the way it became clear to me. I mean, it was obvious, it fascinated me: This fundamental change which occurred about 1780-1781 in Mozart, somewhere in there.

A big change. Which is Beethoven. And Schubert has it and so forth. They all have this, all the Classical composers, and these Romantics don't have it at all. They don't have coherence. You cannot hear a piece from beginning to end, as if you're hearing a single idea.

Now, you can. And now it's no longer just charming, and this, and beautiful and this, and ideas here and there, but now the whole thing has a unity: It fasci-

nates you. You want to concentrate on it, you want to shut everything out, and get it from beginning to end, without interruption. And it was simply done by finding this principle of equivalence.

But this is difficult! Suppose you take a pedal point. If you can reduce a pedal point to a germ of two notes, or a couple of successions of two-note germs, it's much easier to compose a *Motivführung*. Not only is it easier, but the mind of the audience will capture it. Because you're not demanding the greatest elaboration of the audience. It's like Schiller's principle of pleasure in drama. You've got an experience of pleasure, you're reaching the audience with a sense of a level of entertainment, in the simplest way they grasp it. Now, you're leading them through that, through something more --

Renée SIGERSON: Hmm, that's beautiful!

LAROCHE: And like the Brahms. Just think of the Brahms first movement, and the way the whole symphony develops out of the opening of that first movement. And what is it based on? It's based on these two note patterns. Because the idea, music lies between the notes, not on the notes, and that's the lesson. It's the {interval}; the succession of intervals, and the relation of the intervals that is the music, not the notes. And the notes are created to define upward, downward, this relevant thing, -- and upward and downward in all kinds of senses. Like the fourth/fifth complementary, upward/downward, upward/downward. Then the modal composition, like the [Opus] 132 comes out of the upward/downward, upward/downward. You get two keys, on the basis of up or down,, major/minor, upward/downward.

They're very simple equivalences which underlie composition. And the trick in perfecting a composition is reduce an idea and to recognize what these equivalences are which make the thing work. And then you get a *Motivführung*.

And the problem is, is the conductors they're using with defective choruses -- and you hear a lot of problems with defective choruses; without *bel canto*, it doesn't work, they squawk. Then the blank voice freaks; they really ruin it. [laughter] Oh, they ruin everything; because without the appropriate vibrato quality, you do not get real transparency in a work of any complexity. [end audio]

SIGERSON: So your homework assignment is going to be to work through everything that LaRouche just mentioned.

I just wanted to point out two little aspects of this, which as he mentioned -- well, the last first -- which is the Brahms, the two-notes theme. I just want to play it

for you, which you'll recognize. [plays] So you can go and listen to the symphony yourself.

The other one that he's mentioning, is the Benedictus, and just to play the two Benedictus, from the Mozart {Requiem} and then also from the Beethoven {Missa Solemnis}, just so you hear the difference -- which is not bad, but it's, as he said, it's more on the "Be." [Plays the Mozart] So it's "Be-e-ne-dictus." So a lot of emphasis on the "Be-e-ne-dictus."

As opposed to the Beethoven, which is completely different, and as he was saying, in the opening, the Benedictus in the Beethoven is like a concerto, because it's for soloist, orchestra, chorus, and violin soloist as well; it's an absolutely incredible work. But it starts like this: "Bene-di-i-ctus, be-ne-di-i-ctus, qui venit in nomine Domini."

So again, that's more study work.

We're running out of time. There's more things that I want to present, but rather than saying much more, what I'd simply like to do, is mention that... No, what I'd like to do is just end with music. And Megan if you could put on the Kyrie from the Mozart {Requiem}, which is what we did in at the January 19th, 2014 concert, which was in memory of the {life} of John F. Kennedy, and which really was one of the founding operations of swwhat's now called the Manhattan Project. So, if you could play that Kyrie, and then we'll end.

And we probably will not have enough time for questions, so you'll just have to save 'em up for next week. Thank you very much. [The Schiller Institute's entire {Requiem} performance is available here: <http://www.schillerinstitute.org/concerts/2014/boston-requiem/main.html>]

Jason ROSS: Great. Well, it looks like that's a great note to end on, as they say. This was obviously a very full class, and I'm very thankful to John for the tremendous amount of material that he was able to cover today. For the questions that you have, and I'm sure you've got plenty that were raised by the discussion and the musical examples, and the geometric examples, and the live musical examples that John discovered, please send those via email to us, at classes@larouchepac.com, so that we'll be able to have a nice, full discussion next week. And watch your email for a homework assignment coming from John Sigerson. You'll be receiving that in your inbox within the next couple of days. And we'll see you and discuss your thoughts and questions next Saturday at 2:00 p.m. Eastern time.

Looking forward to seeing you then.