

Scientific Discoveries and Theological Realities  
 Working Group Minutes  
 Retreat #2 – August 3-4, 2014

**Reminder:**

**Oct 23** is the abstract deadline for the Boston conference on Religion and Medicine

We are to do 2 presentations: One must be an interdisciplinary panel and the other can be either a panel or paper presentation.

*Work needs to be done outside of the meetings!*

**I Maturidi/Hanafite reflection on 'aql, 'ilm daruri, hukm 'adi, yaqin – Sh. Amin**

Each of these terms is loaded so this talk will address: How Imam Maturidi and the Hanafi scholars looked at 'ilm and knowledge and used 'aql in relation to what is 'ilm.

Background:

Imam Maturidi (d. 333AH/944CE) was a Hanafi theologian who was a contemporary of Imam al Ash'ari and Imam al-Tahawi, but they did not meet. He followed Imam Abu Hanifa's aqidah.

'ILM

Maturidi's work demonstrates his methodology: distinguishing between what is speculative and what is conclusive. Dhanni vs qat'i

- emphasized the role of 'aql in ascertaining certainty in knowledge that is acquired or received.

His purpose at that time (in arguing against other tendencies, e.g. mu'tazilites) was how to distinguish between who is a Muslim and who is not. The discussion was: Is there a difference between 'ilm and yaqin, or between 'ilm and Sidq, kithb, (knowledge, certainty, truth, falsehood). What is 'ilm? How do we know whether to accept an opinion about Islam?

Maturidi approach: There IS knowledge that yields certainty/yaqin. True 'ilm has to be at the level of yaqin. There are three sources of knowledge based on certainty:

- Five senses
- 'aql (intellect)
- khabr saadiq (khabr min rasulillah - traditions attributed to the prophet)

A person must develop the level of yaqin with regard to iman/aqidah; e.g. be certain that God exists and that Muhammad is his messenger.

According to Abu Hanifa - in fiqh you can use taqleed (tradition, imitation) but not in aqidah. In the defense against the Mu'tazili when defending aqidah we should use all rational tools. Kalaam is about polemics – convincing others that this is the truth; not determining truth of aqidah itself.

This defines the role of 'ilm and the role of 'aql – two sides of the same coin. 'Ilm al yaqin regarding aqidah/iman; 'aql in relation to other created beings to convince them of the truth.

YAQIN:

Yaqin exists in the world beyond 'aql, in the spiritual world.

Yaqin is intuitive: it is not, and does not require, an academic exercise but academic exercise may help you to get there.

A mukallaf could have yaqin without 'ilm

The mujtahid does not legislate; he reveals the hukm. According to the ability and potential of the recipient the haqq will be manifest. It resides in Allah and He reveals it according to their ability.

Maturidi's believe we can know the truth to the extent of what is necessary to perform obligations of the deen. Beyond that we are not obligated to know. E.g., knowing how to make wudu is part of yaqin.

*How do we determine whether we take the 'usooli approach or not as to ascertaining yaqin in the texts of Qur'an and Sunnah or is there another approach that is better?*

Maturidi was strict in this regard; thus we see he entitled his book ta'wil (rather than tafsir) or the Qur'an. He was emphasizing that his explanations were dhanni. When it comes to determining what Qur'an and sunnah mean about Allah, His names and attributes then we must have knowledge that is conclusive (qat'i). This is done via an 'usul that is semantical, e.g. differentiating between the true and metaphorical meanings. (Haqiqah vs. majaaz)

If we determine that an ayah is metaphorical we cannot use that ayah as a proof of aqidah. He said that whenever Allah is mentioned in the texts we should apply the literal meaning of the word first; if it is not applicable then we can look at the metaphorical meaning; but if we do that, we cannot use this ayat as proof aqidah because it would introduce the possibility of bid'a.

Allah is beyond conception and perception so how do we use our 'aql to know Him?  
Only Allah can speak about himself. We cannot figure out who Allah is without a text.  
So we must understand the text based on the text itself.

Based on this you can see the role of 'aql. Even though the text is conclusive you still need your 'intellect to determine this. And without 'intellect you are not good mukallaf. That is your ijtihaad. There is no guarantee that what you reach is correct.

This is the methodology of the Maturidi mutakallimoun: use your empirical and rational abilities and try to understand the texts to get as close to yaqin as possible

## II A Theological Conceptualization and Ethico-legal Definition of Maslahah and Introduction to Maqasid – Sh. Jihad

### Ethical-legal definition:

Maslahah (maSlaHah)– benefit, from “SalaHa”, has connotation of rectification; related to manfa’a (from nafa’a)

“A maslahah (benefit) – is the manfa’a (benefit) that the Judicious Legislator intended for his slaves. And it is constituted by the preservation of their religion, souls, minds, progeny, and property.” (Dr. al-Bouti)

Maslahah has the connotation of “Pleasure and the means to it; pain and the means to it”

Maslahah is the preservation of religion (deen), life, intellect, nasl (dignity), and property, in accordance with a particular order among them.

Ibn Ashur defines maslahah as “a quality (waSfun) for an action (fa’alun) through which benefit/rectification is obtained always or frequently for the public or individuals.”

- Always (da’iman) refers to a pure, or absolute benefit, known for certain to be beneficial
- Frequently (ghaliban -most of the time) refers to a preponderant benefit or a maslahah that is raajihah – most of the time it will obtain.
- Maslahah is pleasure and the means to it and mufsadah is harm or pain and the means to it (or anxiety and the means to it) and either can be physical or psychological, worldly or otherworldly.

### Theological definition - Five theological aspects:

- 1) Receptivity to Divine Will (engaging with methodology of maslahah is a response to the Divine Will – this justifies using maslahah instead of some otherwise useful secular approach.
- 2) There is an equation of mafsadah with sin and harm frequently in the Qur’an.
- 3) Enabling alignment with sacred law.
  - a. Enables people to live c/w law/deen as times/lifeways change without being rigid.
- 4) Theophanic witness of the secondary maqsid for Divine Will.
  - a. The books have not been revealed and the messengers have not been sent except for the procurement of benefit and the prevention of harm.
  - b. This is a maqsid of human interaction and activity (not of deen); thus It is a secondary theological purpose/objective of Divine Will (primary = ma’rifah, ibadah, and preparation for Day of Judgment), although it is the primary legislative purpose.
- 5) Being a source of confidence in the divine design – increasing in tawakkul ‘ala Allah.

Looking at maslahah from these two perspectives there is a positive tension – My engagement with legal ethics has a spiritual dimension to it.

### Intro to maqasid

Four aspects to the maqasid tradition:

- 1) General and specific intents and purposes.
  - a. The maqasid of shari’ah are not the maqasid of Islam. E.g. purpose of deen is not to protect private property.
  - b. They are guidelines for human interaction – they are ethical.

- c. We have the specific maqasid of sacred law and then there is a general set – the procurement of benefit and the prevention of harm in general and within the whole scheme there is the maqasid of deen.: to know Allah (which is an ‘ibadah); devotion to Allah; preparation of the human for his rightful place in the afterlife.
- 2) Specific inductive maqasid – the five arrived at through inductive reasoning from Q&S.
- 3) A sequence of priority (in each maqasid)
  - a. Daruriyyat – (dire) necessary for the maqasid - e.g. something to eat to maintain life.
  - b. Hajiyyat – needs - to eat something nourishing
  - c. Tahsiniyyat – e.g. table manners. These embellishments are not just luxury items but they protect the higher levels.
  - d. Where to place things in these categories is an act of ijtihad – not an exact science.
- 4) Criterion for acceptance of a maslahah – 5 precepts for a shari’ah-sanctioned good:
  - a. The object is subsumed within the five recognized purposes (maqasid) of sacred law
  - b. There is no contradiction with the Qur’an
  - c. No contradiction with sunnah
  - d. No contradiction with juristic analogy
  - e. Non-forfeiture of a superior good to itself

Order of maqasid:

- Some minority positions say life (and sometimes intellect) comes before deen because you need them to worship
- The majority position is deen has the highest priority
  - o This may prevent people from using the maqasid to subvert shari’ah.
  - o The first step in the protection of deen is to make sure that everyone in society has access to find his or her way to truth, religion.
  - o No other benefit can be upheld that conflicts with sacred law.
  - o This does not imply permission to mistreat non-Muslims: their rights are protected by shari’ah through other means.
  - o Reflects our understanding that the purpose of life is worship of Allah.

### III Philosophy of Medicine – Dr. Sulmasy

Intro to Program on Medicine and Religion – focused on Abrahamic religions

Richness is in speaking as a Muslim rather than talking to the least common denominator

Examples of the role that philosophy plays in theology:

- UN discussion about human cloning, all Islamic countries abstained because they did not feel they had enough scientific knowledge to take a position.
- How to interpret texts
- Logic re: how to apply text to new situations
- Definition of terms e.g. if illness excuses something, what does illness mean?
- What do we mean when we say “God heals”?
- When is someone dead?
- How does one evaluate which argument is better than another when there is more than one opinion?

#### IV Relationship between Maslahah, Maqasid, Darurah – Sh. Jihad

Darurah – life-threatening situations or maqsid-threatening – loss of one of the five objectives.

##### *First rubric – relationship between maslahah and maqasid*

The maqasid are maslahah – specific intents and purposes that are subsumed under the general intents and purposes of human activity.

- Like a Russian nesting doll:
- Outside – sacred law occurs for the procurement of benefit and avoiding harm
- Next level the five maqasid. Each one is a maslahah. They are general – kulliyat – universals (approximate, not absolute); Transcend specific case.
- Next – specific cases – determining in that specific case what is a maslahah

General maslahah identified through the process of induction and validated by generations of master jurists. Predominantly within Shafi'i tradition; Accepted in the Sunni tradition.

- Any previously unidentified candidate for inclusion under the standard maqasid must prove itself by being diagnosed as a legitimate maslahah via defined diagnostic criteria.

##### *Rubric 2 – relationship between maslahah and darurah (dire necessity)*

Benefit is juxtaposed against harm (mafsadah).

Every darurah is a maslahah however not every maslahah is a darurah.

Darurah a situation that warrants the permissibility of prohibited matters.

- another way of approaching darurah –a situation that becomes a jurisprudential case
- The situation of dire necessity is temporary. Exception lasts as long as the necessity.

Is it obligatory to follow the exception? Does someone have the right to forfeit his life? No, but one criterion is the level of certainty that benefit will be obtained.

Ibn Taymiyyah – qadr and qadah. He says in front of you there is a solution (e.g. pork) so you should not wait for the some other means from the ghaib.

##### *3<sup>rd</sup> rubric - Relationships between maqasid and darurah.*

In the case of darurah the maqasid may guide you through figuring out what to do.

- e.g. anything that would jeopardize an element of deen would trump whatever was below it.

What is a “good”? The controls (dawabit) of determining benefit vs. harm:

- 1) Take a long time to think about it and being very careful that as we proceed to pronounce we are firm and clear in what we are doing. Otherwise say “I don’t know”
- 2) If someone gets it right that is very good, but a mistake can be dangerous.
- 3) Be very careful to avoid delusion. Not being over-confident.
- 4) Be careful to avoid hawa – caprice, tendencies and proclivities that you will always tend toward – cognitive bias. Be aware of your biases.

e.g. madhhab bias – realizing that there is another opinion out there that is permissible.

There are two categories of benefit:

1. Those that are known with certainty – coming from Qur'an and sunnah
  2. Those that are determined through the use of investigation; relying on the intellect
- The modern Muslim world equates reason with empiricism. Pre-modern separates them.

Methods to determine what is a maslahah:

- 1) use the naS
- 2) ijma'
- 3) al qiyas a mu'tabar – formal juristic analogy
- 4) al istidlal as sahih – sound drawing of evidence
- 5) al 'aql – rational faculty; looking for the rationale of what has been pronounced upon and then examining the similarities in the new case (ma'akul al ma'anaa) could be hidden wisdom – hukm ta'budi (devotional ruling) e.g. why we go 7 times around ka'aba?
  - o could be accessible – e.g. that wine is haram due to intoxication
  - o may be unclear – e.g. shortening prayers is to avoid difficulty – we don't know what is difficult so scholars moved the wisdom to something clear – distance.
- 6) Al Dhan al mu'tabar – acceptable/recognized supposition
  - a. Dhan is 75% certainty = “supposition”, “surmise”
  - b. Jurisprudence requires strong Dhan is almost at the level of knowledge/certainty
  - c. Dhan is getting at what we are trying to understand by using evidence that leads us to the sense that this is the correct course of action within a margin of error (al-Asbahi) – similar to statistical assumptions in medicine
  - d. “I prefer this course and I have evidence – this is Dhan”; (al-Ghazali) differentiating it from cognitive bias
  - e. 3 conditions for recognized Dhan
    - i. There is some support for this strong opinion or supposition
    - ii. There is no contradiction with shari'ah
    - iii. We arrive at this supposition after thinking carefully and taking our time
- 7) Inductive reasoning – istiqlal
- 8) Experimentation/the experience that comes from the process of repeated trials. Tajarrub

Public versus private benefit: what will accrue for the most number of people (utility).

- What happens when the two conflict?
  - o Imam Malik, who was a proponent of maslahah as a methodology, preferred that it be deployed for public benefit; not used in private ibadaat, which should be built on clear text or example.
  - o How certain are we of benefits/harms in each sphere (e.g. when we say we will forego a private benefit for a public one)?
- Three types of benefits
  - o Those that have already been identified/considered in shari'ah reasoning– maslahah mu'tabarah – e.g. intoxication
  - o Already rejected (mulghah) e.g. switching muratabah punishments based on characteristics of the one being punished
  - o A novel case - what has not been considered – undefined, unqualified –mursal
    - Does it fit into a maslahah?
    - Is there a public/private conflict? What is the evidence that this is/is not in line with Islamic tradition?

Universal legal maxims linked to maslahah – each has a definition of how it is properly applied and exceptions:

1. An individual harm may be borne for the sake of preventing a general harm.
2. Dire necessities make prohibited matters permissible.

3. What is made permissible because of dire necessity is measured/limited according to the need at hand.
4. An individual dire necessity does not void the rights of another person.
  - a. Exception – if the person is starving and the livestock belongs to a neighbor who refuses it, it can be taken (with some exchange)
5. The disposal/management of public affairs is invariably linked to the benefit of the public.
  - a. People in leadership no longer have the same rights as the public – they are responsible.
6. All harm must be removed.
7. A harm cannot be removed with the same level of harm.
8. If two harms conflict we remove the more harmful using the less harmful.
9. Some haajiyaat can be given the same consideration as darurah – either public or individual. (e.g. a tent city for refugees as a basic need rather than a just a cave).
10. The prevention of harm is given priority over the procurement of benefit.
  - a. Prevention/removal of the harm is a benefit.

Case examples where we might examine the use of maslahah to address ethical issues:

Informed consent:

What to do when the patient does not really understand? How do you determine/respond

When do you determine when someone can't make his/her own decision?

When the doctor is explaining he has the power to skew the patient's decision.

e.g. in cancer treatment is the MD a surgeon or an oncologist?

Does the MD quote the statistical experience of experts as risk or his own experience?

Who makes decisions on behalf of the patient? American individualism, HIPAA

Vs. more communal approach

Harm (mafsadah) could be understood as risk.

- Balancing risks, potential benefits and alternatives
- How do you define success – long vs. short term complications
- Interpretation of evidence, biases; the use of protocols

Examples:

Case of heart valve replacement surgery – the surgery could kill them but not having surgery could kill them.

Cancer radiation of trachea could prevent surg, but later complications could lead to surg later.

## V Concepts of Health: Exploring the Philosophies of Medicine and Nursing – Dr. Trinka

Two well-known definitions of health:

- “The state of being free of injury or illness.”
  - o The practical application of this definition is seen in most medical care.
- “A complete state of physical, psychological and social wellbeing and not merely the absence of disease” (World Health Organization definition since 1940s).
  - o Not practical or measurable
- “Disease is definable but health is an enigma.” – maybe we can’t define it.

Other definitions:

- Nursing literature
  - o Definitions range between the extremes mentioned above
  - o Nightingale said that the purpose of health was spiritual fulfillment; others have included spiritual wellbeing as a part of health.
- Medical literature
  - o Everything from “all parts are functioning properly” to “restoration of right relationships” (Sulmasy)
    - Right relationships may be between insulin and glucose; or patient and other people, or patient and God
- Classification of definitions
  - o Health as a functional state – the parts work
  - o Health as a dynamic state - Balance, homeostasis
  - o Health as a spiritual state - Integration, wholeness, actualization, human flourishing, right relationships, meaning, spiritual fulfillment

Characteristics of health

- Dynamic, multidimensional
- Deals with the concept of potential
- Culturally and individually defined to some extent

Determinants of health: Even given a narrow (medical) definition of health, it is widely recognized that medical care contributes only about 10% of the variance in health status.

Illness–related terms– also unclear. Differing conceptions/usage of term:

- Disorder is the objective condition; disease is the diagnosis and sickness is how the patient experiences it.
- Sickness includes disease but is broader than that (D. Sulmasy).
- Illness is what the person has and disease is what an organ has (EJ Cassel).
  - o Treating suffering is not the same as treating disease

Disease and health are not opposite ends of a single continuum; instead are on different continua or intersecting axes.

- Impairment/disability is not necessarily illness/disease; could be a state of health
- Dying could be a state of health – how do we understand and promote a “good death”?

Relationship between health and wellbeing

- According to WHO definition they are the same OR
- Health is a portion of wellbeing but not all wellbeing is health

Is anyone ever healthy?

- The broader our definition, the less likely anyone is to meet it.
- The more we identify and treat risks to health prior to the onset of an perceived sickness, the more people are identified as being unhealthy.

Purpose of health – not for its own sake



- Actualization/flourishing?; Happiness?; “A good and worthy life” ?
- Health assists us in this but is not sufficient”.

#### What is a person?

- More than the genetic make-up or the sum of its parts, although it is contingent upon it
- Al-Ghazali – soul and body as rider and horse
- Is consciousness equated with the brain...or are soul and body independent and cooperative...or is the idea that consciousness is emergent on the brain the sweet spot in the middle? This is problematic from an Islamic perspective – does not explain post-mortem existence of the soul.

#### Models of medical practice

- Biomedical Model (BM) – what is done but we all argue against it.
  - o Reductionist, based on Cartesian dualism, goal is to identify and treat disease
- Biopsychosocial (BPS) – Engel, 1970s – more consistent with WHO definition
  - o Systems view; goal is to promote harmony
  - o Each thing is a whole and part of a larger whole
- Biopsychosocial-spiritual model (Sulmasy)
  - o Systems view; The human is a spiritual being seeking transcendence
  - o Goal is to restore right relationships, facilitate transcendence
- Nursing perspective – many models, but generally
  - o The goal is to partner with patients to create proper environment for healing
  - o Assess strengths rather than illnesses/deficits; use them to improve health.

#### Ways of knowing – mostly addressed in nursing literature; see LeBlonde article for medical POV

- Empirical – addresses how we study physiological processes/diseases
  - o What we can know through physical senses
  - o Uses randomization, eliminate uniqueness
  - o Not so good for studying sickness
- Tacit Knowledge - background observation, subconscious
  - o Used with wisdom, experience to tailor treatment for an individual patient
  - o Reflexive knowing, practical wisdom
- Ethical knowing – is this right, responsible, correct thing to do?
  - o What is our duty toward people; how to implement virtues
- Personal knowing – how do I know what I know?
  - o Leads to ability to use self as a therapeutic tool
- Aesthetic knowing – what does it mean and how is it significant?
  - o Leads to transformative acts and higher-level healing/wellness
  - o Intuitive knowing, “the art of nursing”
- Emancipatory knowing – understanding the socio-political-economic situation
  - o Who benefits, what’s wrong with this picture?

#### Measurement

- Evidence-based medicine only values empirical knowledge and almost eliminates the possibility of incorporating other kinds of knowing into our practice
- We don’t have good ways to measure the other ways of knowing
- This creates a significant danger of cognitive bias substituting for knowledge.
- How do we incorporate these different ways of knowing in a responsible and useful way and meaningfully measure outcomes?

## VI Classifications of Science and Concepts of Risk – Dr. Ahsan

Branches of science:

- Empirical sciences
  - o Based on observable phenomena; can be tested for validity, reproducibility
- Formal sciences - Mathematics, logic
  - o Use a priori methodology – maxims
  - o Decision theory, statistics
- Interdisciplinary, applied sciences such as medicine
  - o Uses many other sciences
  - o E.g.: uses statistics to determine whether there is benefit/harm in a treatment
- Natural sciences – elucidate rules that govern natural world
  - o Chemistry, earth sciences, life sciences
- Social sciences
  - o Applying scientific method to study human behavior, social patterns
  - o vs. humanities (no analytical approach)- e.g. anthropology

Methods of formal sciences essential to testing of scientific models

- Advances in formal sciences often allow advances in empirical sciences
  - e.g. new statistical methods allow interpretation of large data bases

Medicine – “applied science r/t art of healing by diagnosis, treatment and prevention of disease”

- Applies biomedical science, research to dx/tx disease through medication or surgery
- Foundational sciences used to develop and evaluate treatments

Statistics is used in many disciplines as a formal way to test a hypothesis

- Are two things the same or different and what is the probability that they are different?.
- Determination of whether there is benefit or harm depends on how you define benefit, what variables you measure, what you include in a model
  - o Interpretation of benefit often skewed by issues such as distance between points on a Likert scale
  - o How does this impact on the interaction between medical experts and religious scholars?
    - The knowledge is Dhanni, but is it presented in that way?
    - Does the medical expert understand the statistics? Ideally the paper presented is co-authored by an epidemiologist, statistician, etc.
    - Does the fact/level of uncertainty reach the faqih? Ideally the faqih would be specialized in this area and have some background in the relevant disciplines.

Constructs to link medicine to basic science – evidence-based medicine

- Appraising the evidence – types of studies
  - o Systematic reviews – increase weight of individual controlled trials
  - o Experimental – randomized controlled trial, blind, or double-blind
    - More weight because it is less biased than observational studies
  - o Observational studies – “natural” studies, no assigned experimental group
    - With comparison group e.g. Cohort - case control, cross section
    - No comparison group = descriptive
  - o Case series – is there a pattern?
  - o Expert opinion
    - Less weight because it is based on fewer experiences

Depending on the type of question we are asking, the best type of evidence may vary:

- How do you determine if a treatment is effective? - Best way = systematic review
- How do you determine someone's prognosis in 10 years? - Best way is probably a cohort study because it takes less time
- If you are looking at well-being, e.g. quality of life - qualitative study

Things we worry about:

Risk of bias:

- The degree to which the result is skewed away from the truth (we believe truth is out there)
- Causal inferences from randomized trials can be undermined by flaws in design, conduct, analyses, and reporting

Confounding factors

- Other patient features/causal factors, apart from the one being measured that can affect the outcome of the study

Problems that can lead to bias: (RAMMBO)

- Recruitment - Were the subjects representative of the target population?
- Allocation - Were the same sorts of participants receiving the intervention and comparison; Does randomization always work?
- Maintenance – did the participants stay in their group?
- Measurement - Unmeasured confounding – factors you are unaware of
- Blinded, Objective - Concealment – does it matter that it is blinded?

Something we may want to write about: The implications of the science of statistics and how it drives our decision-making. Maybe we should get a consult from a statistician to help us think through some of these things.

Basic terminology:

- p value.

Measure of probability that a result is due to chance (not probability that result is true)

The smaller the value (usually  $< .05$ ) less likely due to chance

$p = .05$  means that 1/20 times we are wrong.

Is this the right cut point for a population of human beings?

- Confidence intervals

- Estimate of the range of values that are likely to include the real value
- 95% chance of including the real value if the experiment is repeated 100 times
- Narrower the range > the reliability; CI narrower with increased participants

- Predictive value

- The ability of a test to predict a condition depends on its sensitivity and specificity AND the prevalence of the condition in the population that is tested. Thus even a highly accurate test can have low predictive value for a rare condition, meaning it will be wrong more often.

Measuring outcomes – what people choose to/to not measure has a lot to do with how we interpret evidence.

- trials are often designed to hit a mark to allow a company to sell a drug; may or may not help people. What was NOT measured? And what are the implications? How were the results reported?

Summary - We cannot do RCTs for most clinical questions – this is a flaw in our evidence base.

Ethics and evidence-based healthcare – how we think about the evidence base for ethics e.g.:

- There is a presumption that a blood transfusion will save a patient.

- The patient is a Jehovah Witness. He has textual evidence to support his position.

Should you force the JW to have a transfusion?

Have we critically challenged the first assumption?

- A computer-aided diagnosis is made that indicates that a patient likely has appendicitis and needs surgery.

- The program is statistically more accurate than a senior clinician (92% vs. 80% accurate)

- The physician disagrees.

Is it ethical for the physician to withhold surgery against the computer or perform surgery against his “better judgment”?

Is it ethical to base decisions on observational studies? Estrogen replacement therapy and coronary heart disease: a quantitative assessment of the epidemiologic evidence led to a widespread dangerous practice that was changed almost overnight when results of an RCT were released.

- What about “first do no harm”?

- The onus is on us to say it is beneficial, but shouldn't we have to be held to a higher standard regarding that it is not harmful. Had we held to that maxim we might have avoided harm to those women?

Equipose - uncertainty about the relative benefits and harms of the treatment

- A physician may offer enrollment to a RCT only when there is equipose

Evidence grows over time. Patience may be the wisest course when new treatments hit the market to see what new evidence arises in practice.

If you don't base your decisions on best evidence you may be behaving unethically.

Nonetheless, drug companies only have to demonstrate with 90% certainty that a drug is not worse than other existing alternatives.