INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI

NPTEL

NPTEL ONLINE CERTIFICATION COURSE
An Initiative of MHRD

Science, Technology and Society

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A few exercise let us do okay, they may know paper in your final test but it is important to do some kind of exercise on the basis of model. Let us start with reference to the stratification system.

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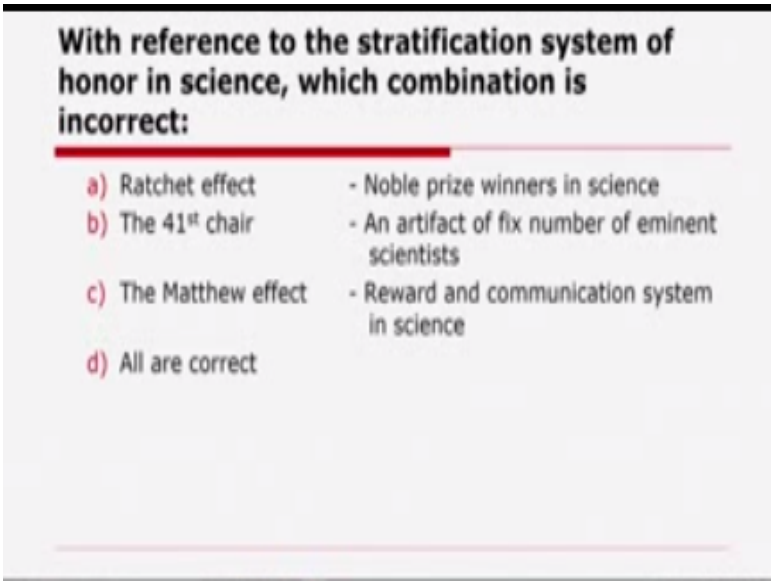

Of honor in science which combination is incorrect it. 1 is ratchet effect I mean which combination is incorrect ratchet effect, noble prize winner in science, the 41st chair, an artifact of fix number of eminent scientists, the Mathew effect reward and communication system in science, all are correct. Which combination is incorrect we will find the last one is in correct okay. Similarly if you find some problem you can still write to me and question why it is all are correct.

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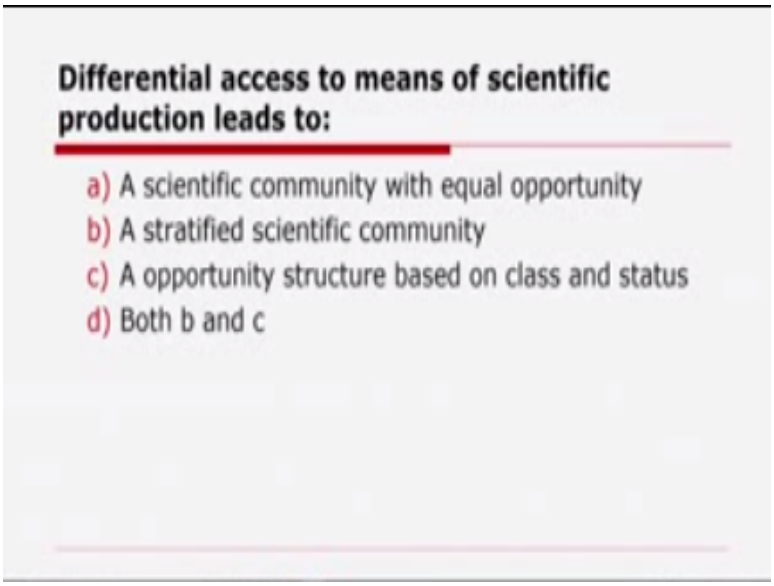

Differential access to means of scientific production leads to, a scientific community with equal opportunity, a stratified scientific community, a opportunity structure based on class and status okay and both b and c, a stratified scientific community as well as a opportunity structure based on class and status.

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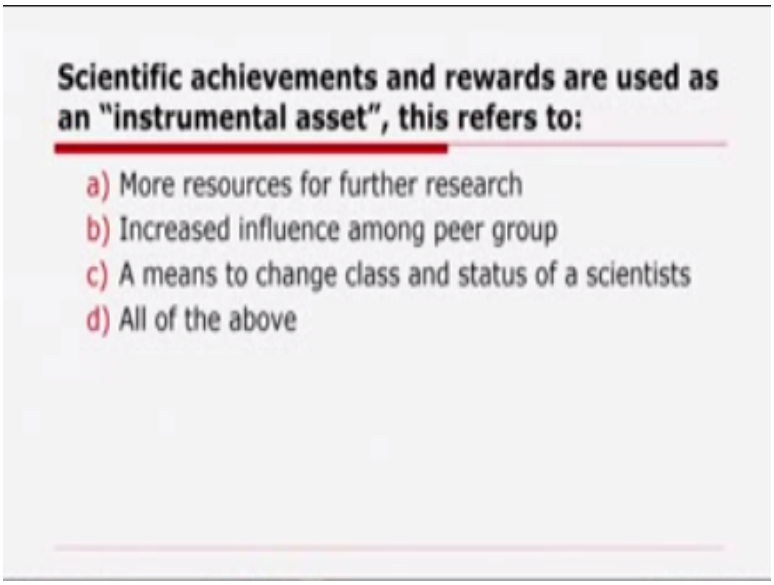

Then scientific achievements and rewards are used as an instrumental asset, this refers to what? Scientific achievements and rewards are used as an instrumental asset, more resources for further research, increased influence among peer group, a means to change the class and a status of a scientist, or all of the above.

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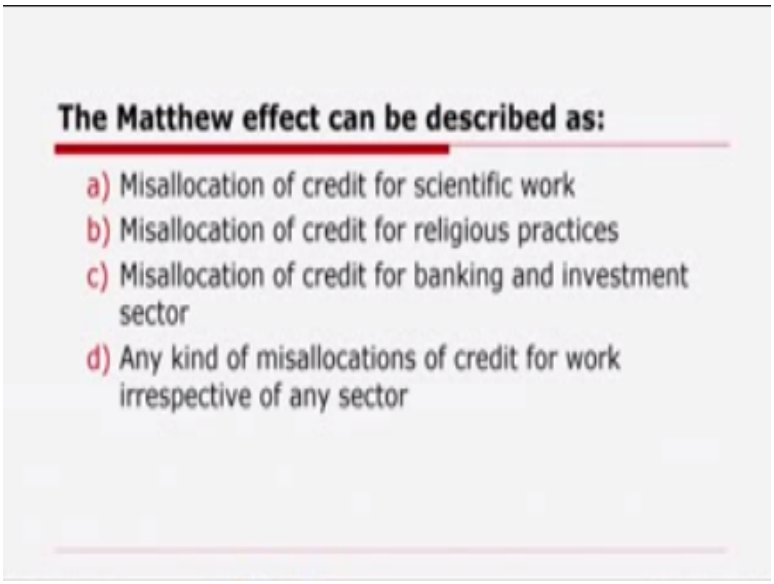

The Matthew effect can be described has, the Matthew effect in science can be described as misallocation of credit for scientific work, misallocation of credit for religious practices, misallocation of credit for banking and investment sector or any kind of misallocation of credit for work irrespective of any sector. The Matthew effect in science can be described as misallocation of credit for scientific work is correct.

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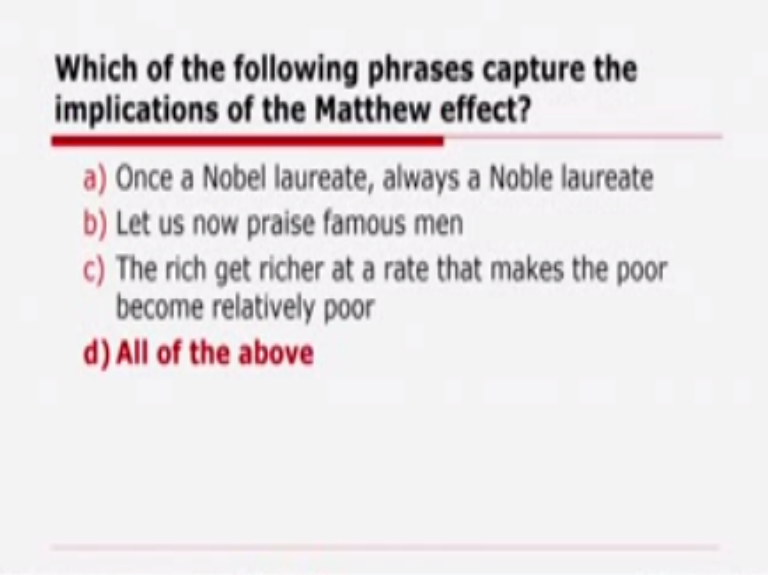

Which of the following phrases captures the implications of the Matthew effect? Once a noble laureate, always a noble laureate, let us now praise famous men, the rich get richer at a rate that makes the poor become relatively poor or all the above okay.

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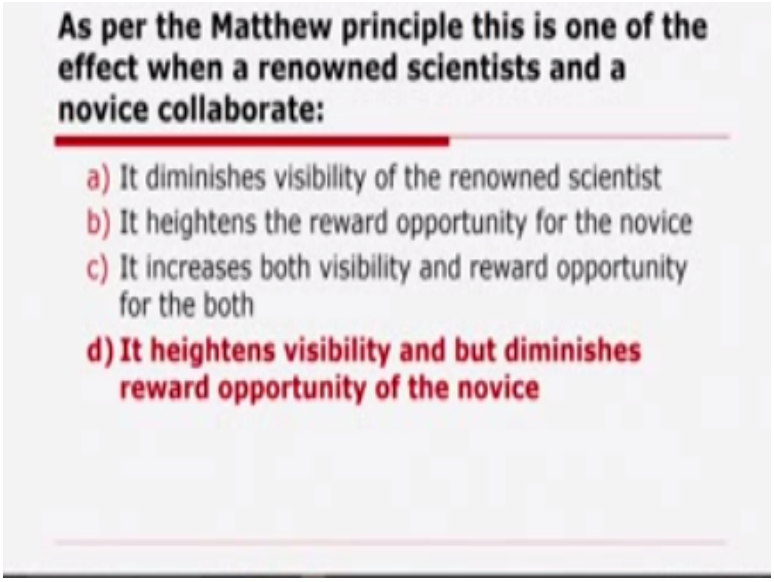

As per the Matthew principle this is one of the effect when a renowned scientist and a novice collaborate, it diminishes visibility of the renowned scientist, it heightens the reward opportunity for the novice, it increase both visibility and reward opportunity for the both, it heightens visibility and but diminishes reward opportunity of the invoice okay it heightens visibility and but diminishes reward opportunity of the invoice.

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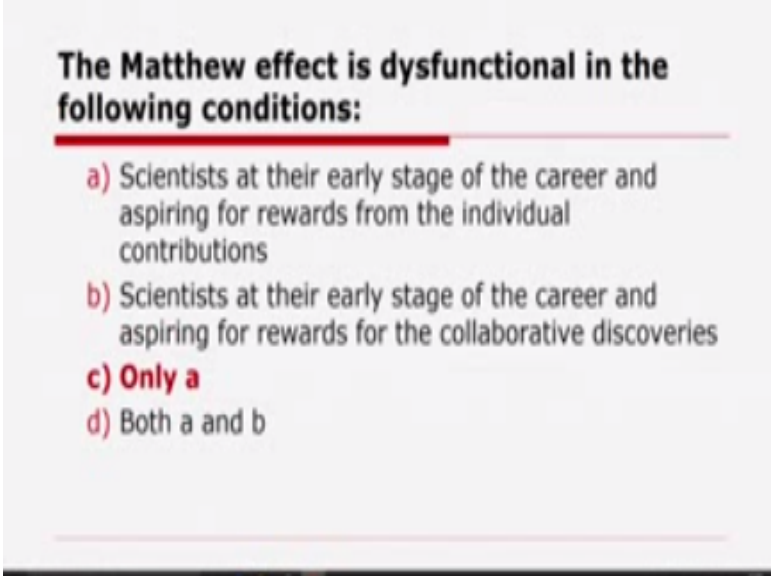

The Matthew effect is dysfunctional in the following conditions, which following conditions. Scientist at their early stage of the career aspiring for rewards from the individual contributions, Scientist at their early stage of the career aspiring for rewards for the collaborative discoveries, only a or both and b. only a I mean Scientist at their early stage of the career aspiring for rewards from the individual contributions, only a or both a and b. Scientist at their early stage of the career aspiring for rewards from the individual contributions as well as collaborative discoveries okay only a.

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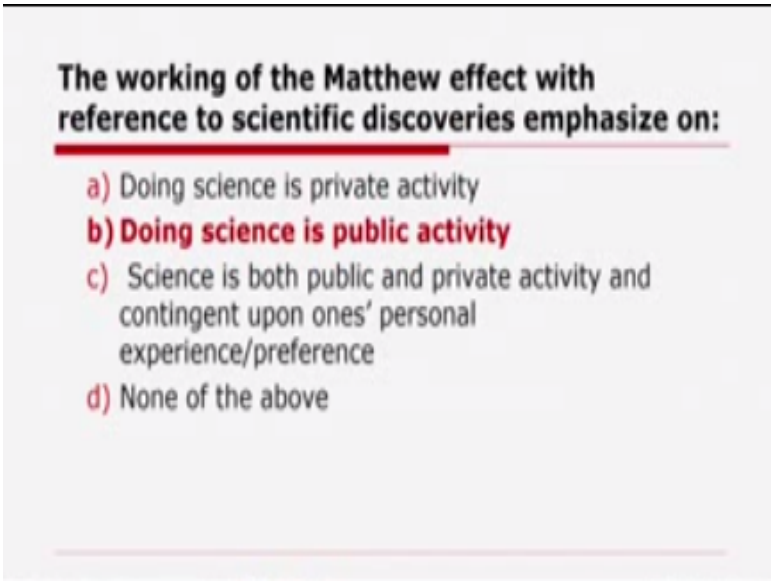

The working of the Matthew effect with reference to scientific discoveries emphasize on, doing science is private activity, doing science is public activity, science is both public and private activity and contingent upon ones personal experience/ preference, none of the above. Doing science is public activity.

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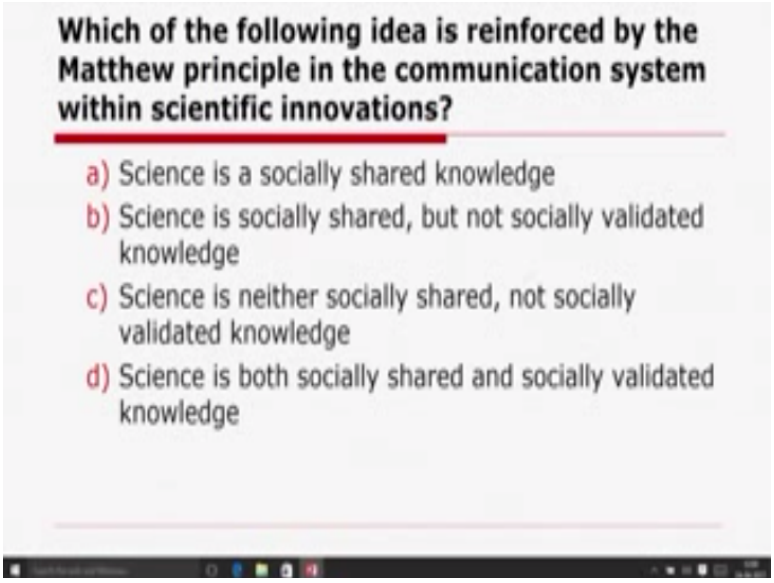

Which of the following idea is reinforced by the Matthew principle in the communication system within scientific innovations? Science is socially shared knowledge, science is socially shared but not socially validated knowledge, science is neither socially shared, not basically validated knowledge, science is both socially shared and socially validated knowledge, okay. Science is both socially shared and socially validated knowledge.

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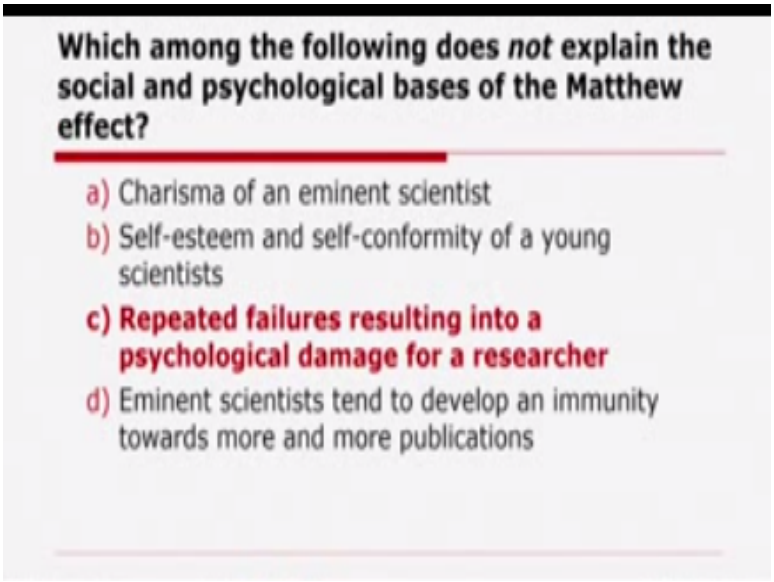

Which among the following does not explain the social and psychological bases of the Matthew effect? Charisma of an eminent scientist, self esteem and self conformity of a young scientist, repeated failures resulting into a psychological damage for a researcher, eminent scientist tend to develop immunity towards more and more publications, repeated failures resulting into a psychological damage for a researcher.

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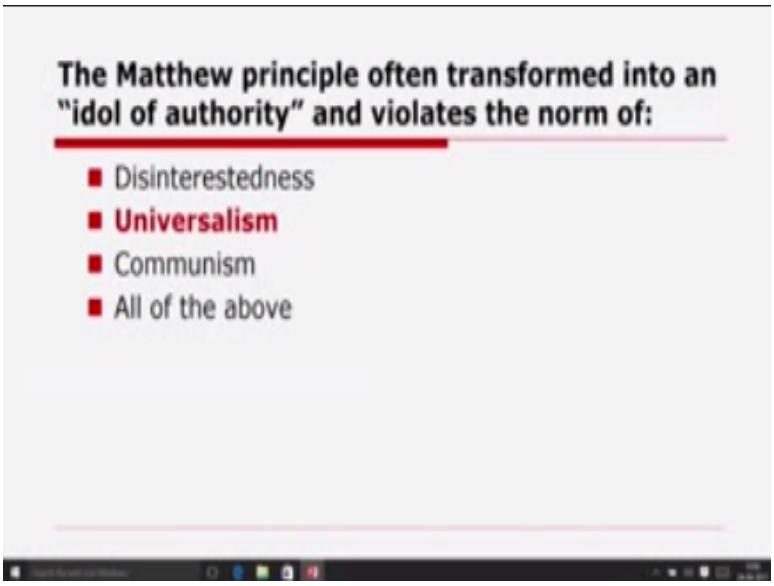

The Matthew principle often transformed into an idol of authority and violates the norm of, disinterestedness, universalism, communism, all the above, universalism okay.

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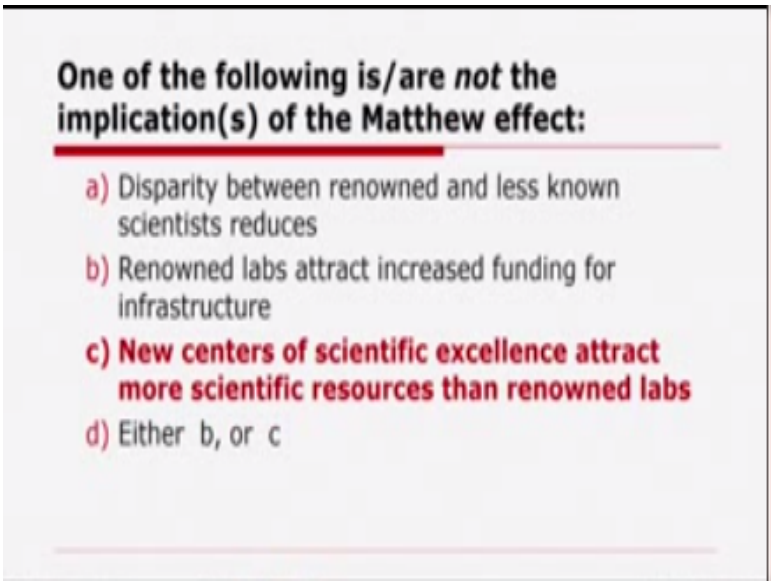

One of the following is are not the implication of the Matthew effect, disparity between renowned and less known scientist reduces, renowned labs attract increased funding for infrastructure, new centers of scientific excellence attract more scientific resources than renowned labs, either b or c. okay new centers of scientific excellence attract more scientific resources than renowned labs.

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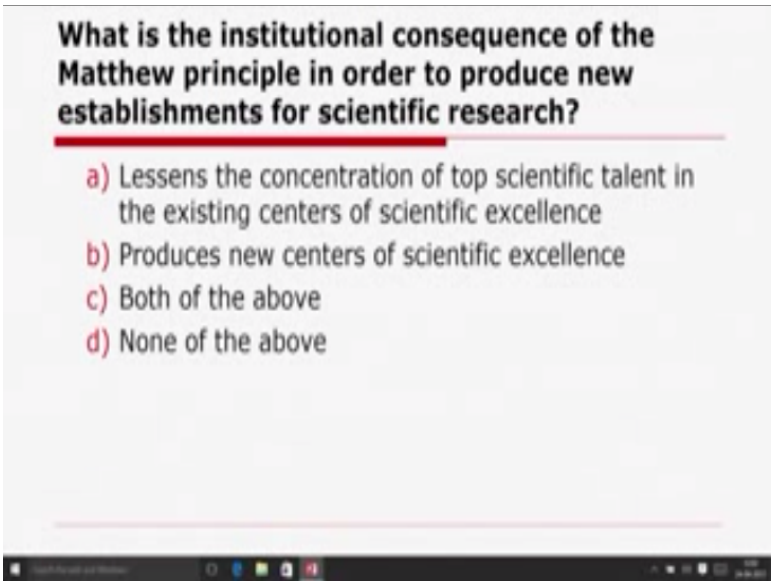

What is the institutional consequence of the Matthew principle in order to produce new establishments for scientific research lessens the concentration of top scientific talent in the existing centers of scientific excellence produces new centers of scientific excellence both of the above and none of the above.

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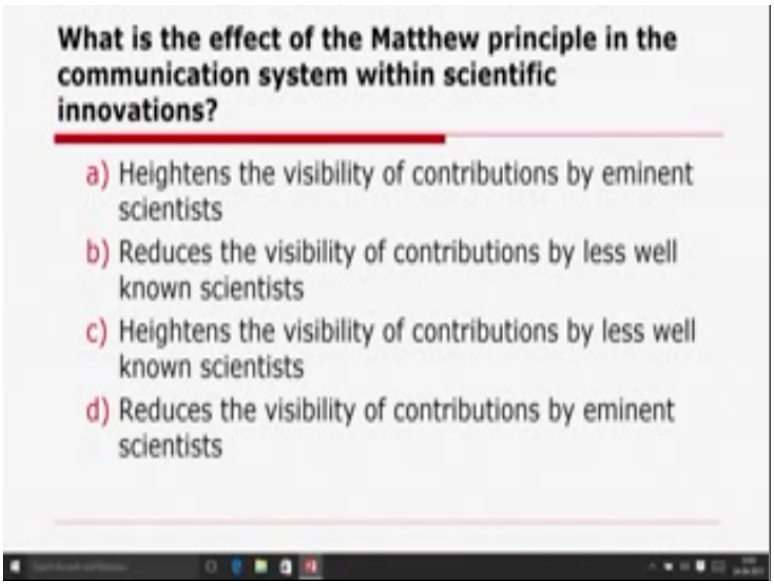

What is the effect of the Matthew principle in the communication system within scientific innovations heightens the visibility of contributions by eminent scientists reduces the visibility of contributions by less well known scientists heightens the visibility of contributions by less well known scientists reduces the visibility of contributions by eminent scientists we are not talking about reward system here we are talking about communication system.

That is why it heightens the visibility of contributions by less well known scientists that if it will be reward system in the suppose if the question will be what is the effect of Matthew principle in the reward system scientific innovations then this one will not be right okay. In the communication system it heightens the visibility of contributions by less well known scientists okay. But in the reward system it reduces the visibility of contributions by less well known scientists okay.

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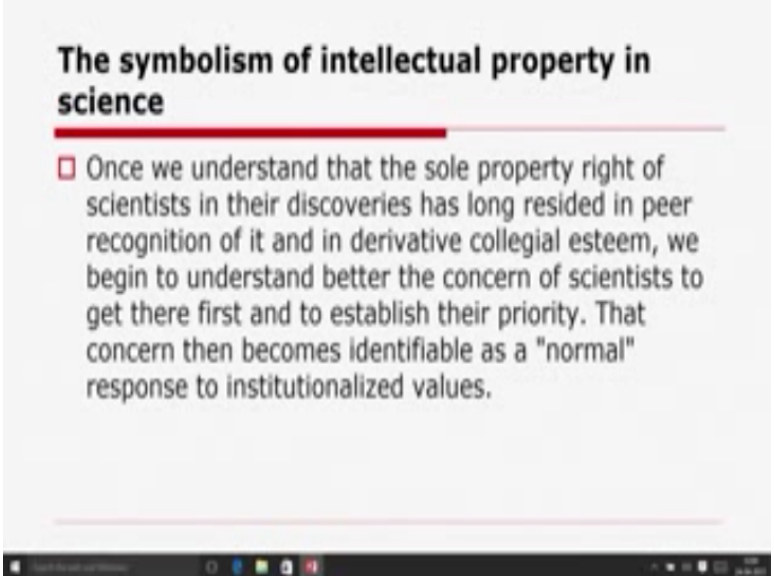

What we have done, we have done some exercises pertaining to this module in the so far as the Mathew effective science in terms of reward and recognition in the form of communication system okay in this module we have also discussed the Mathew effect in science in terms of initial Mathew effective generality then \n terms of its cumulative advantage and the symbolism of intellectual property okay.

Then how such inequalities in science or college how inequalities in science leads us to more focus discussion on how technology is also unequal distributed how is the design the way we have already discussed how the public roads in India designed in such a way we have also discussed the construction of New York bridge okay.

Now the way we are going to look at, look at these structure that the trump how the particular technology each socially economically politically implicit in the context of war can do artifacts politics okay will disposed the social setting of technology okay this is very important but difference social setting of technology will discussed in part the technology setting of society fast.

Then how technological setting of society must be rejected in favor of social science then when we say technology, technology since the socio technically image and the social and the technical cannot be separated and any attempt to threat them in isolate would be mistreated okay is that clear then what we are going to do then how a particular technology is politically influenced how a particular technologies social research economically determinant okay.

This culturally influenced and so on okay through different examples will try to learn what are the third currents of the wage this two domains of enquiry namely technology and politics at interact before getting into discussion on do artifacts at politics before getting into the article by Laden do artifacts at politics how technology has inherent political property okay.

We will stay on with some more assignments some more exercises which of paramount significance okay suppose you have discussed certain questions like what is the institutional consequence of the Mathew principle in order to produce new establishments for scientific research what is the effect of the Mathew principle in the communication system within scientific research.

I mean it heightens the visibility of contributions by less well known scientists okay we are taking about communication system not reward system okay in the context of Mathew effect in scientific of inequality okay.

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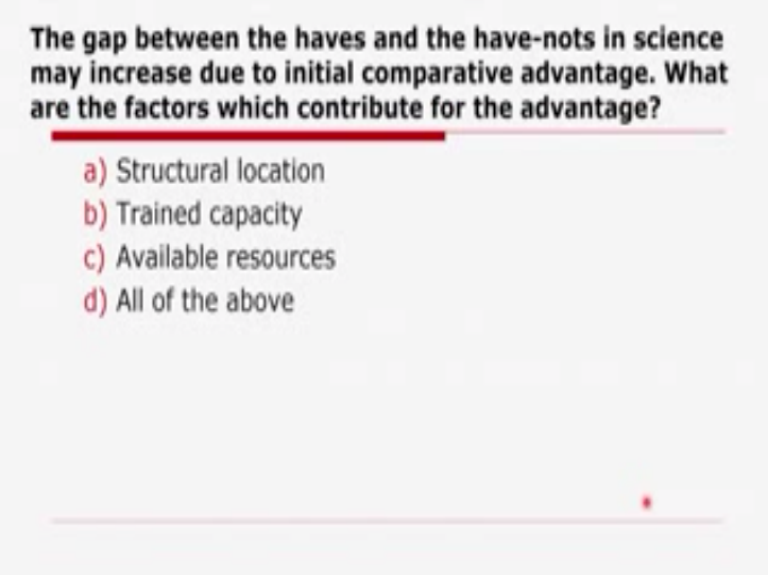

Now let us come to some more questions the gap between the haves and the have-nots in science may increase due to initial comparative advantage. That you know that initial comparative advantage are having name and frame having or of being elite scientists okay and what are the factors which contribute to such advantage okay a) structural location, b) trained capacity, c) available resources and d) all of the above we know that it is very important have structural location trained capacity and available materials resources. And also symbolic resources then if n represents.

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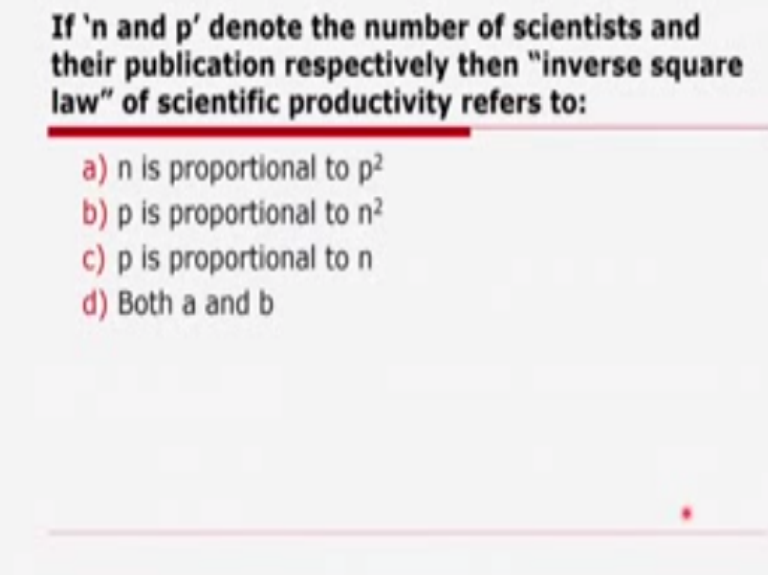

Number of scientist and p represents public n I mean those scientist publications if n and p denote the number of scientist and there publications respectively then inverse square law of scientific productivity refers to n is proportional to p^2 p is proportional to p^2 p is proportional to n^2 p is proportional to n and both a and b I mean n is proportional to p^2 as well as p is proportional to n^2 the answer is publication is proportional to the inverse square of scientists okay p is proportional to n^2.

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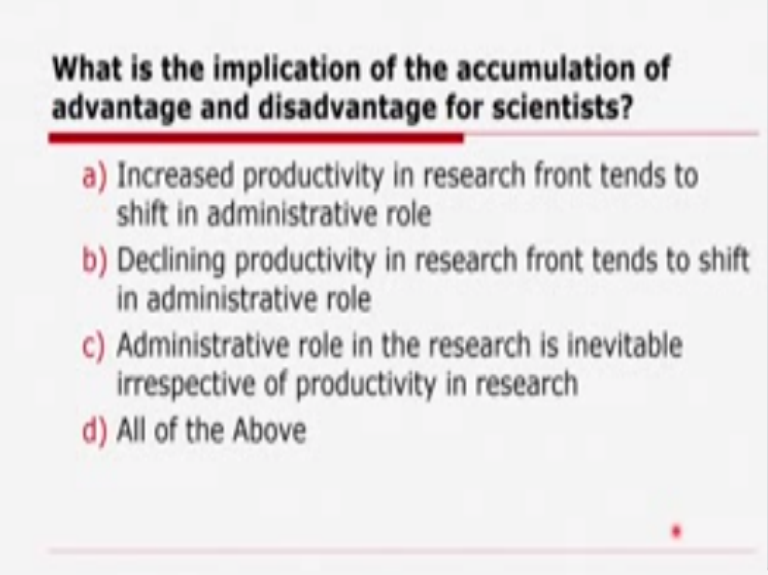

Then what is the implication of the accumulation of advantage and disadvantage for scientists what is the implication of the accumulation of advantage and disadvantage for scientists a) incensed productivity in research front tends to shifting administrative role, b) declining productivity in research front tends to shift in administrative role, thirdly administrative role in the research is inevitable irrespective of productivity in research and or d) all of the above in fact declining productivity in research forint tends to shift in administrative.

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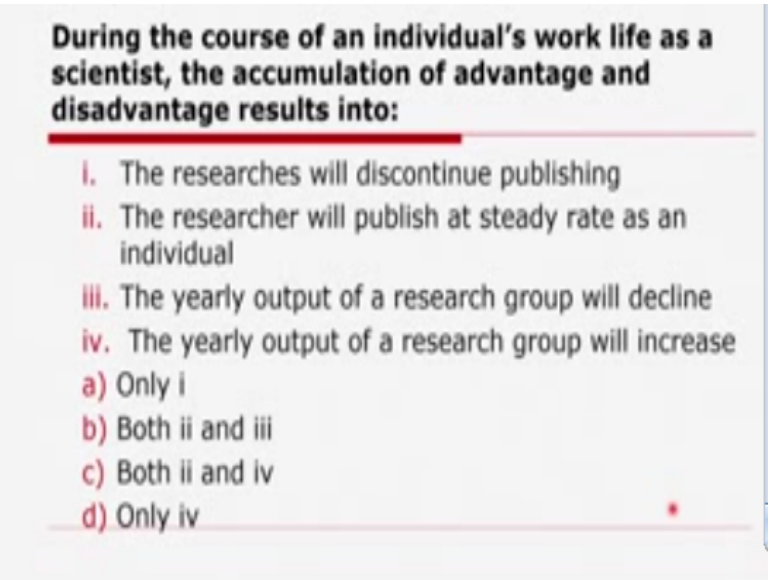

Then we are confronted with a question like this that during the course of an individual's work line as a scientist the accumulation of advantage and disadvantage results in one the research is we will discontinue publishing the research is the researchers will discontinue publishing the researcher will publish at a steady rate as an individual.

The annual out the yearly output of a research group will decline the yearly output of a research group will increase or I mean a) option a) only one only the first one or will both the second one and third or both seconds and fourth one or only the fourth it is the second and the third one the researcher will publish at a steady rate as an individual as well as the annual output the yearly output of a research group will decline.

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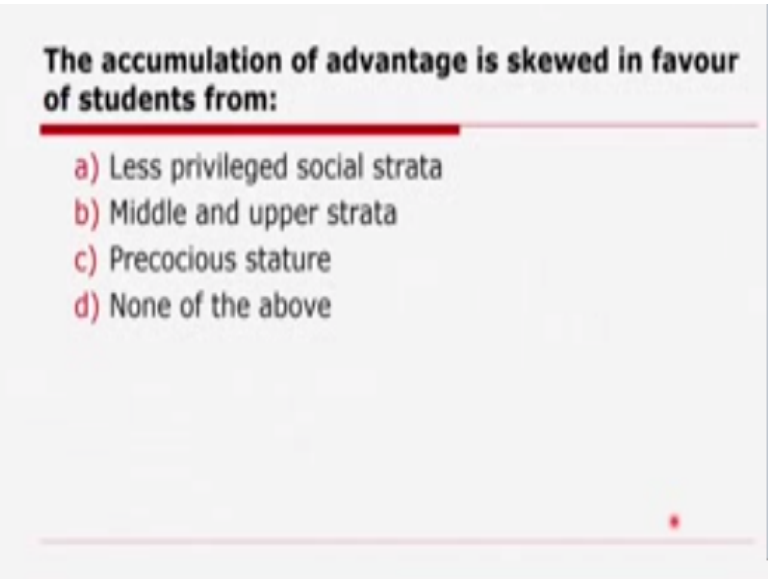

The accumulation of advantage is q in favour of students from less privileged social strata middle and upper strata precocious stature or none of the above precocious stature.

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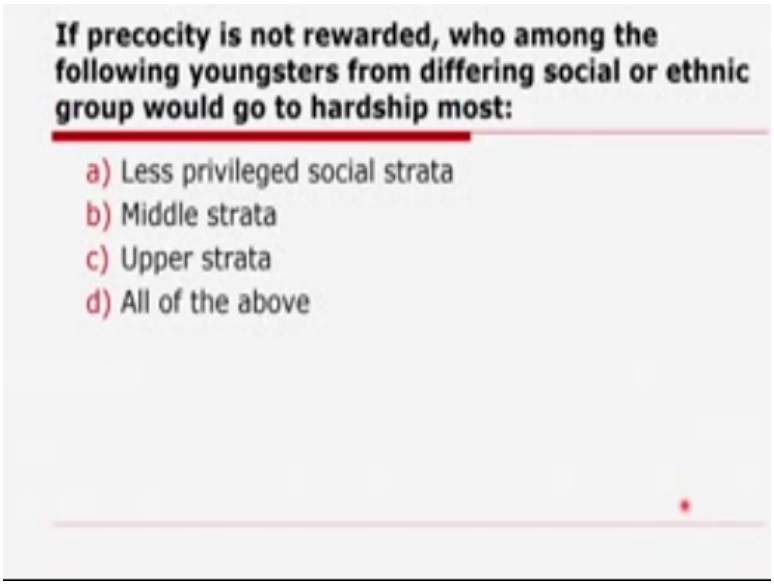

We have already discussed this a precocity is not rewarded who among the following youngster from different social or ethnic group would go to hardship most less privileged social strata, middle strata, upper strata or all of the above that is less privileged social strata.

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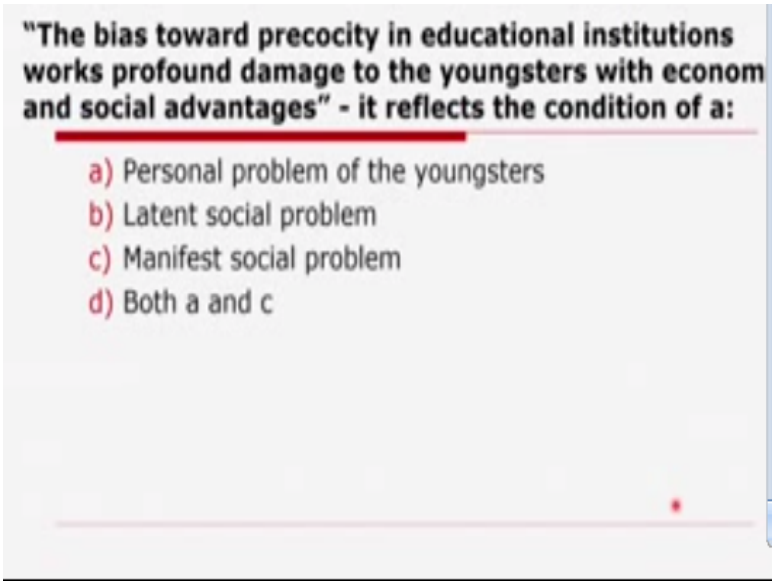

The bias towards precocity in educational institutions works profound damage to the youngsters with economic and social advantages, it reflects the condition of a personal problem of the youngsters latent social problem manifest social problem or both a and c I mean or both personal problem of the youngsters and manifest social problem that is latent social.

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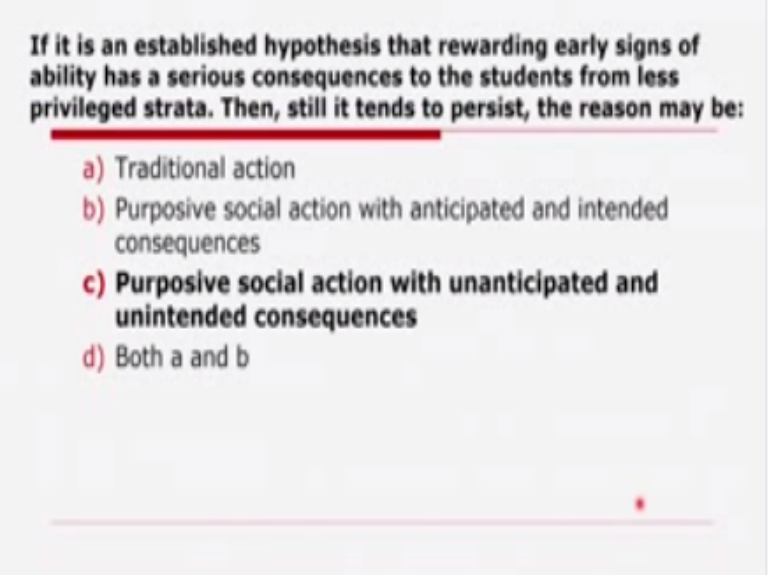

If it is an established hypothesis that rewarding early signs of ability has a serious consequence to the students from less privileged strata. Then still tends to persists the reason may be traditional action purposive social action with anticipated and intended consequences c) purposive social action with anticipated.

And with unanticipated and unattended consequences or both b and c I mean purposive social action with anticipated or intended consequences as well as purposive social action with anticipated or rather purposive social action with unanticipated as well as or unintended consequences b) both a and I mean both a and b I mean both traditional action as well as purposive social action with anticipated or intended consequences it is purposive social action with unanticipated.

And unintended consequences in fact we will discuss purposive social action in the lecture to follow before we get into a defects of politics of lend and mean because will be a pre concept to such things and Marten cannot be evaluated independently Marten has to be situated against the bad drop of against the bad drop of Weberian methodology in the social sciences and we will definitely discuss Weberians methodology in social sciences before migrating to do at effects.
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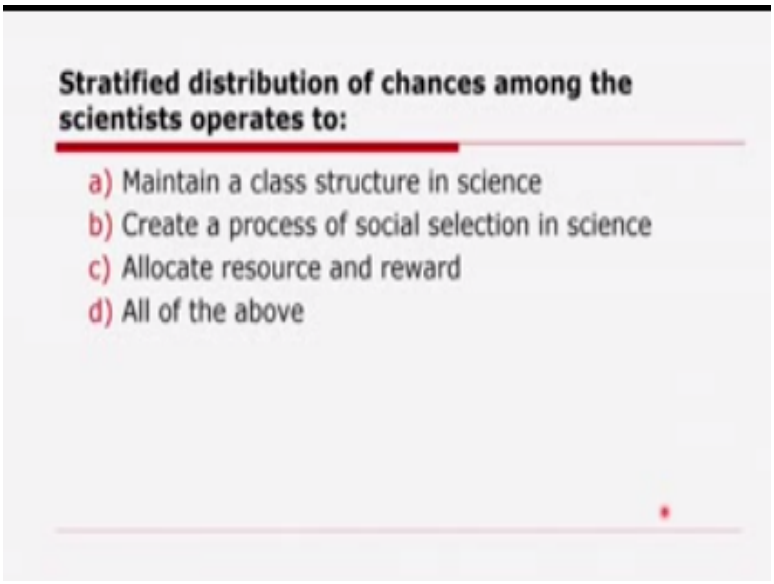

Okay stratified distribution of chances among the scientists operates to maintain a class structure in science or create a process of social selection or allocate resource and reward or all of the above.

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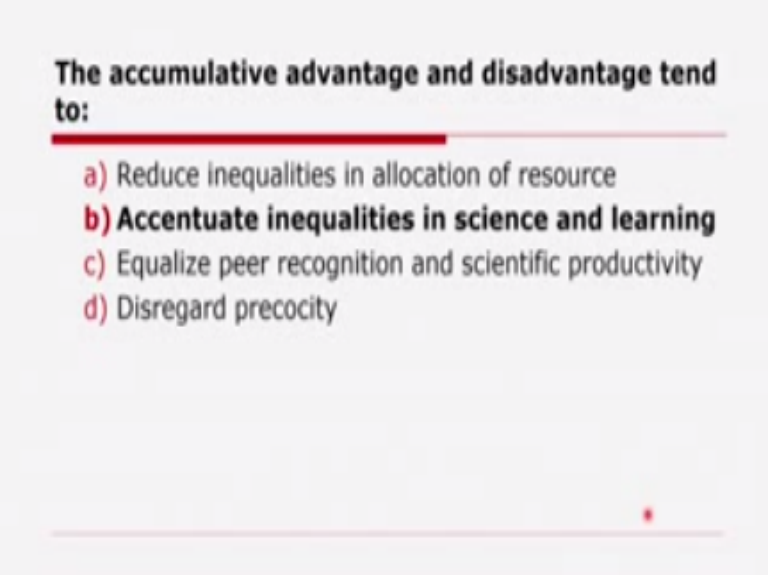

The accumulative advantage and disadvantage turn to reduce in equality regional location of resources or tend to accentuate inequalities in sciences and learning or equalize peer recognition in scientific productivity or disregard precocity it is and in the accumulation of advantage and disadvantage tend to accentuate inequalities in science the process of accumulation of advantage and disadvantage.

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Among scientific issues this leads to concentration of material resources and select it elite universities the proportionate sharing of human resources among all universities see concentration of both human and material resources at elite universities de proportionate sharing of material resources in all universities okay it is the process of accumulation of advantage and disadvantage in scientific in material resources at elite.

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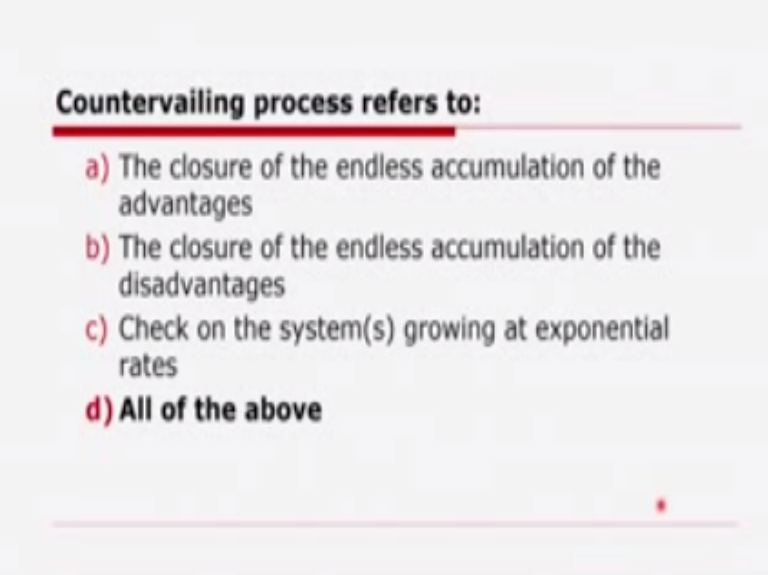

Countervailing process is referred to what countervailing process is at me refer to the closer of the endless accumulation of the advantage be the closure of the endless accumulation of the disadvantages see check on the systems growing at exponential rates are all of the above.

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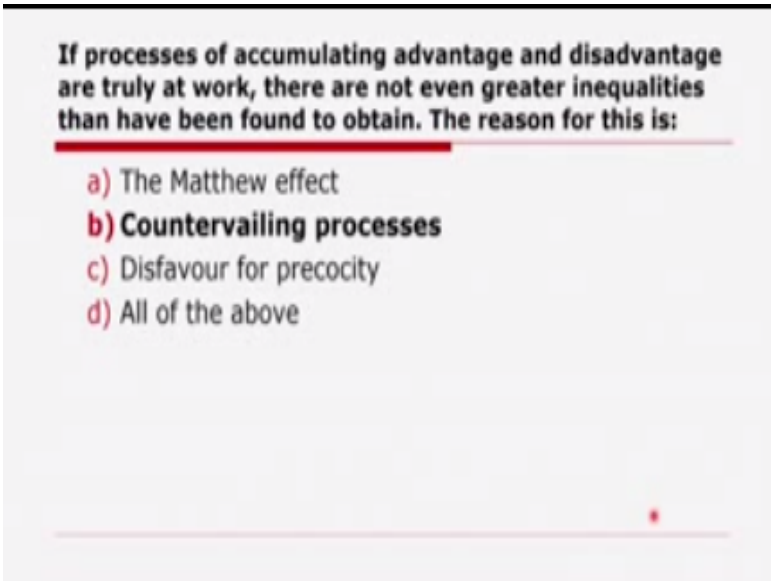

It processes of accumulating advantage and disadvantage at truly at work, there are not even get inequalities than have been found to obtain there are reason for this is the Mathew effect the countervailing process C disfavor for precocity or all of the above.

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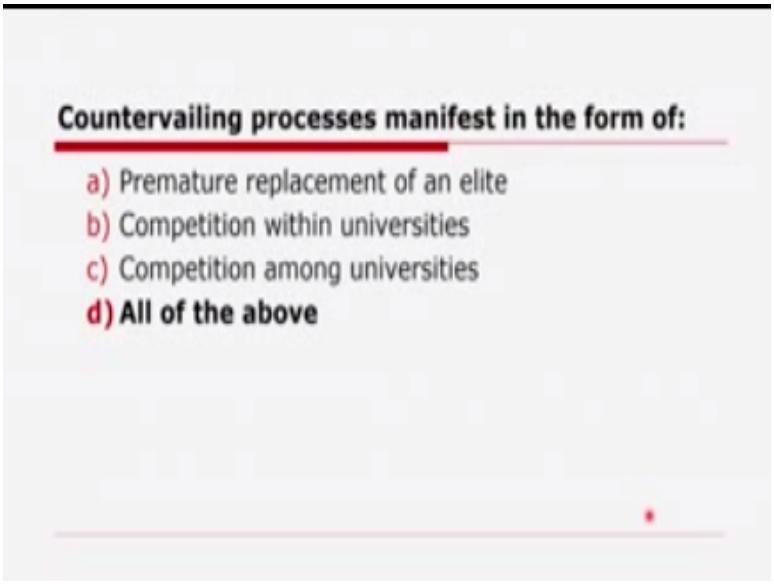

Countervailing processes is manifest in the form of work option number one premature replacement of an elite option B competition within universities option C competition among universities option D all of the above I means all of the above I mean countervailing processes is manifest in the form of all these I mean premature replacement of the elite properties in both within and among universities.

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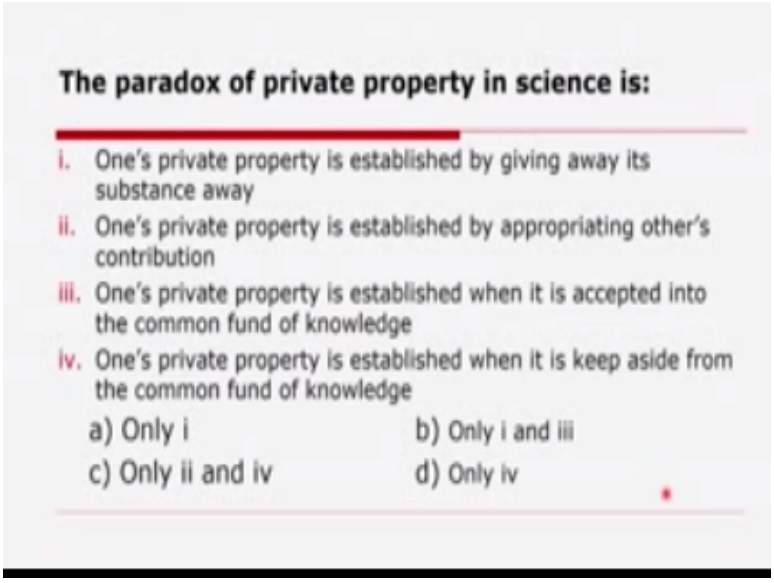

The paradox of private property in science refers to quite what do we mean that effects of paradox of private property in science once private properties established by giving a way it substance away once private property is established, by appropriating others contribution once private property is established when it is accepted into the common fund of knowledge once and number four 4ht option is once private properties established when it is keep aside from the common fund of knowledge only one.

I mean once private properties established by giving a way it substance away are only in there I mean one private properties established by giving away it substance away or and as well as once private properties is established when it is accepted into the common fund of knowledge option C is a only two and four I mean once private property is established by appropriating others contribution as well as once private properties established when it is kept aside from the common fund of knowledge.

Or only for I mean once private properties is established when it is kept aside in the common fund, it is only and 1 and 3 I mean once private property is established by giving away substance it or by giving it substance away and once private property is established when it is accepted in the common then question arise like this symbolism of in lacteal properties reflects in following is situational practices of scientist and references bibliographic accounts or all of the above this all of the above.

I mean the symbolism of intellectual property reflected in terms of scientist references and bibliographic accounts symbolism intuitional function of the intellectual property system of science.

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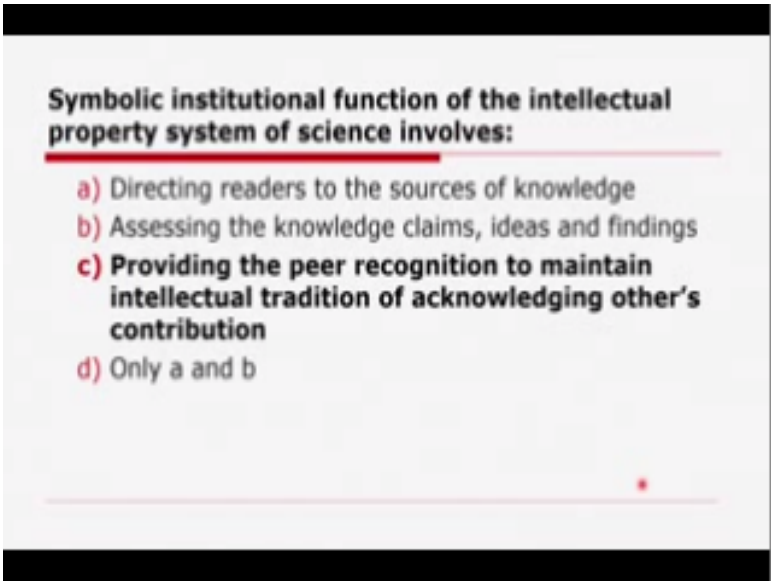

Involves what directing readers to the sources of knowledge assessing the knowledge plains ideas and findings C providing the peer recognition to maintain intellectual tradition of acknowledging others contribution or instrumental cognitive function of the intellectual property system of science involves from symbolic institutional function.

We are coming through instrumental cognitive functions of property system of science what doers you think directing readers to the sources of knowledge or assessing the knowledge claims ideas and findings see providing the peer recognition to maintain intellectual tradition of acknowledging others contribution or b only a and b I mean directing leads to the sources of knowledge as well as the single knowledge claims ideas and findings it is is only a and b now are you able to follow the difference between symbolic institutional function on the one hand and instrumental cognitive function of the intellectual property system of science okay.

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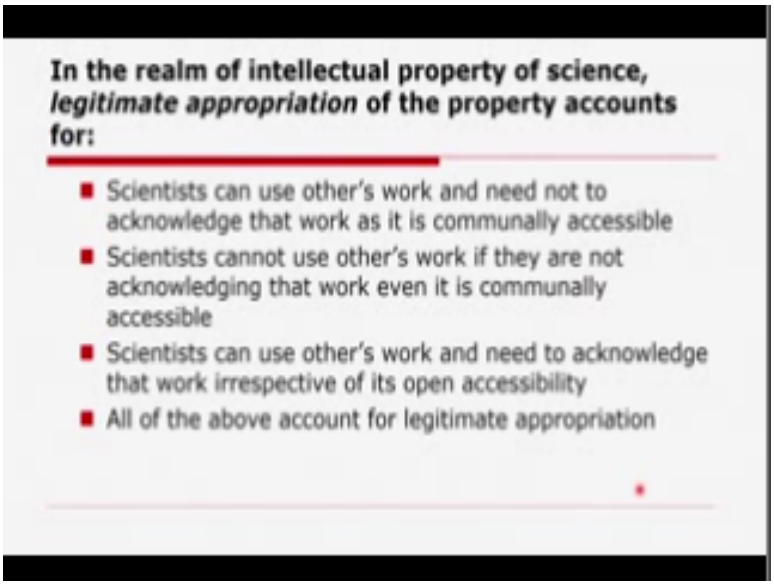

In the realm of intellectual property of science legitimate appropriation of the property accounts I mean in the realm of intellectual property of science legitimate appropriate of the property accounts for scientist can use others work and need not be acknowledge that work as it is communally accessible scientists cannot use others work if they are not acknowledging that work even it is communally accessible scientists can use others work and need to acknowledge that work irrespective of its open accessibility or all of the above account for legitimate appropriation scientist can use others work and need to acknowledge that work irrespective of its open accessibility.

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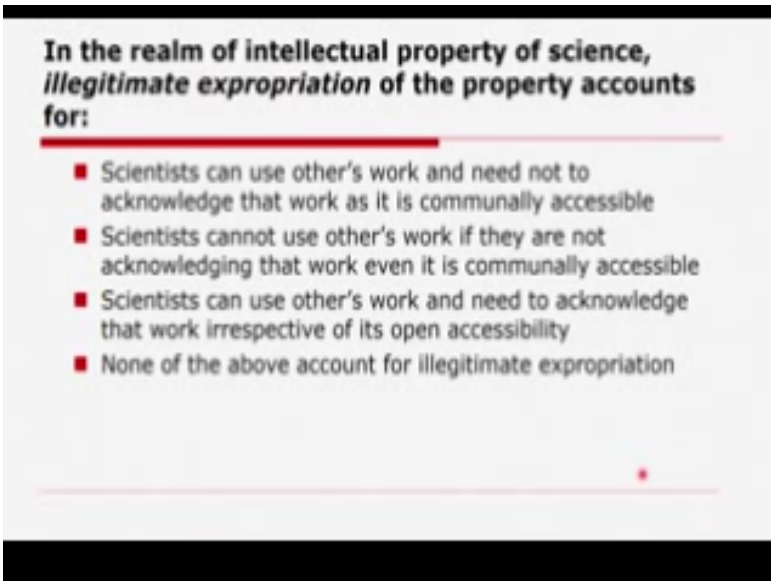

In the realm of intellectual property of science illegitimate expropriation of the property accounts for scientists can use others work and need not to acknowledge that work as it is communally accessible scientists cannot use others work and need to acknowledge that work irrespective of its open accessibility or none of the above account for illegitimate expropriation not acknowledge that what as it is communally accessible it is an illegal or illegitimate expropriation of the property.

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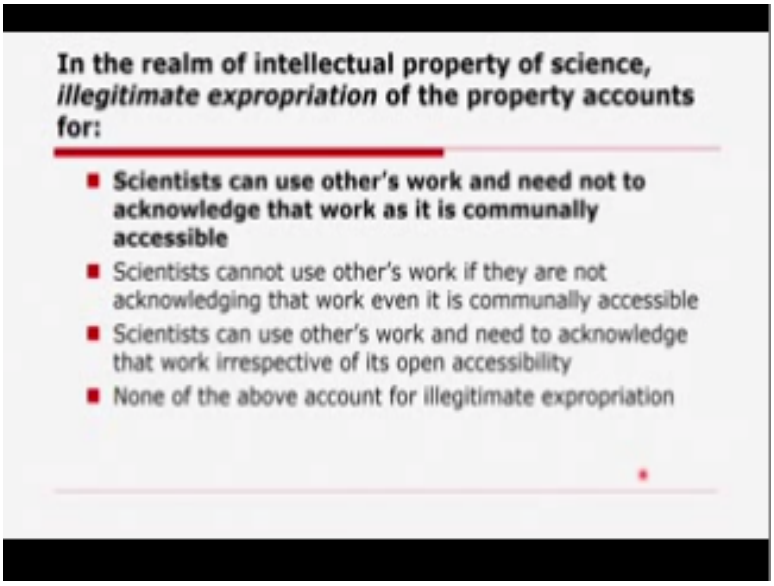

Okay now before we move on to the relationship between technology and politics or technological facts have inner in political properties let us fast discus verberian methodology which is very important in social science research in the ways in which martin is researched interaction between science and social science okay.

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