THE MESOLITHIC I.G. SIMMONS, G.W. DIMBLEBY, AND CAROLINE GRIGSON pdf

1: The Prehistoric Society - Book Reviews - by Year

Note: Citations are based on reference standards. However, formatting rules can vary widely between applications and fields of interest or study. The specific requirements or preferences of your reviewing publisher, classroom teacher, institution or organization should be applied.

England, provides detailed evidence for an episode of fire-disturbance of woodland atc. As with other similar episodes in the uplands of Britain, the pollen data documents post-disturbance regeneration to woodland through ruderal and grassland herb, heath and successional shrub plant communities. Such seral ecological changes have previously been interpreted as the desired result of deliberate disturbance by Mesolithic foragers, as part of a conscious land-use strategy designed to attract ungulate populations to the disturbed areas and increase hunting efficiency and yield. The effects of fires on temperate forests: Ahlgren, Eds Fire and Ecosystems. Ecological effects of forest fires. Botanical Review 26, â€" Animal exploitation in Mesolithic Denmark. The interpretation of anthropogenic indicators in pollen diagrams. Pollen et Spores 23, â€" Effects of fire on birds and mammals. Fire and man in postglacial woodlands of eastern England. Journal of Archaeological Science 17, â€" Fungal remains from Holywell Coombe. Chapman and Hall, pp. The Quaternary of Orkney. Quaternary Research Association Field Guide. Quaternary Research Association, pp. Oxford Journal of Archaeology 16, â€" The longevity of pastoral episodes of clearance activity in pollen diagrams: Journal of Biogeography 11, â€" Pollen analysis of Iron Age cow dung in southern Africa. Vegetation History and Archaeobotany 9, â€" The development of high moorland on Dartmoor: Climate Change and Human Impact on the Landscape. The ecology and behaviour of deer in relation to their impact on the environment of prehistoric Britain. CVA Research Report 11, pp. Goldammer, Eds Fire in the Environment: Transformation of a northern hardwood forest by aboriginal Iroquois fire: The Holocene 5, 1â€"9. Palaeoenvironment in the Vale of Pickering, Part 2: Environmental history at Seamer Carr. Proceedings of the Prehistoric Society 54, 21â€" Spores of the dung fungus Sporormiella: Quarternary Research 28, â€" Rapid climatic change in coastal southern California inferred from pollen analysis of San Joaquin March. Quaternary Research 37, 89â€" Prehistoric human use of fire, the eastern agricultural complex, and Appalachian oak-chestnut forests: American Antiquity 63, â€" Effects of prescribed burning on deer browse. Journal of Wildlife Management 34, â€" The Development of British Heathlands and their Soils. Oxford Forestry Memoir Man, space and the woodland edge: Fire and the Scottish Mesolithic: Leuven University Press, pp. Detection of human impact on the natural environment: Multiple charcoal profiles in a Scottish lake: Palaeogeography, Palaeoclimatology, Palaeoecology , 67â€" CBA Research Report 11, pp. BAR International Series , pp. The effect of grazing on the pollen production of grasses. Vegetation History and Archaeobotany 2, â€" Fire in the virgin forest of the Boundary Waters Canoe area, Minnesota. Quaternary Research 3, â€" A preliminary investigation into the use of fungal spores as anthropogenic indicators on Shetland. Symposia of the Association for Environmental Archaeology No. Quarternary Research Association Field Guide, pp. Archaeology and the Flora of the British Isles. Oxford University Committee for Archaeology Monograph 14, pp. Quaternary Research Association Field Guide, pp. Palaeogeography, Palaeoclimatology, Palaeoecology , â€" Population and landscape in Mesolithic lowland Britain. CBA Research Report 21, pp. The southern Pennine Mesolithic and the ecological record. Journal of Archaeological Science 3, â€" European deer economies and the advent of the Neolithic. Papers in Economic Prehistory. Cambridge University Press, pp. Birkbeck College, University of London. Deer on sub-climax vegetational stages. Transactions of North American Wildlife Conferences 15, â€" Fire technology and resource management in aboriginal North America and Australia. Hunn, Eds Resource Managers: North American and Australian Hunter-Gatherers. Fire and Mesolithic subsistenceâ€"managing oaks for acorns in northwest Europe? Ungulate populations, economic patterns and the Mesolithic landscape. Fire ecology, animal populations and man: Proceedings of the Prehistoric Society 42, 15â€" Patterns of Mesolithic land use in southern England: Quaternary Newsletter 94, 37â€” The infernal cycle of fire ecology. Forest fire and human interaction in the early Holocene woodlands of Britain. Palynological and stratigraphic evidence for hydrological changes in mires associated with human activity. Anthropogenic Indicators in Pollen Diagrams. Approaches to determining aboriginal fire use and its impact on vegetation. Bulletin of the Ecological Society of America 64, â€” Indian fires in the prehistory of New England. Early human disturbance of the natural environment recorded in annually laminated sediments of Lake Gosciaz, central Poland. Vegetation History and Archaeobotany 1, 33â€” Journal of Archaeological Science 20, â€” Forest grazing and clearance in temperate Europe with special reference to Denmark: Indian-set fires in the forest of the northeastern United States. Pollen diagrams from the North York Moors. New Phytologist 69, â€” Evidence for vegetation changes associated with Mesolithic man in Britain. Towards an ecology of Mesolithic man in the uplands of Great Britain. Journal of Archaeological Science 2, 1â€” The ecological setting of Mesolithic man in the highland zone.

THE MESOLITHIC I.G. SIMMONS, G.W. DIMBLEBY, AND CAROLINE GRIGSON pdf

2: Enhancing Virtual Reality with Artificial Life - www.enganchecubano.com - www.enganchecubano.com

Caroline Grigson This paper is the first of a series on the craniology of four species of Bos. Here (and in the next paper) Bos taurus in Britain is used to establish a basic craniology for the genus.

Addington, L R Lithic illustration: University of Chicago Press: Quaternary Science Reviews 19, Andrefsky, W Lithics. Macroscopic approaches to analysis. The Holocene 16, Ascough, P L. Society of Antiquaries of Scotland, Forth Naturalist and Historian 20, â€"9. Discovery Excav Scot, Quaternary Science Reviews 27, Edinburgh New Philosophical Journal 1, â€"6. Society of Antiquaries of Scotland: Scottish Archaeological Internet Reports [online] Society of Antiquaries of Scotland. Oxford Journal of Archaeology, 22 2 , â€" Oxford Journal of Archaeology. Proceedings of the Prehistoric Society. Sea Technology 43, Comments on Milner et al. McDonald Institute for Archaeological Research: Discovery Excav Scot, new series 1, 77â€"8. University College London Institute of Archaeology: The late Upper Palaeolithic and early Mesolithic sites. Oxford University Committee for Archaeology Monograph Council for British Archaeology Report No. Barton, R N E. Journal of Quaternary Science 18 7 , â€" Cambridge Archaeological Journal 17 Supplement S1 , Bell, M Prehistoric Coastal Communities: The Mesolithic in Western Britain. Council for British Archaeology Research Report World Archaeology 29 1 , Late Quaternary Environmental Change: Physical and Human Perspectives Pearson Education: Quaternary Science Reviews 3, Journal of Quaternary Science 4, Journal of Ecology 80, New Phytologist , Oxford, - Binford, L Nunamiut Ethnoarchaeology. American Antiquity 43, Binford, L In Pursuit of the Past. University of California Press: Mesolithic and later sites around the Inner Sound, Scotland. Discovery Excav Scot new series 1, 56â€"7. Journal of Biogeography 16, Birks, H J B. Proceedings of the Royal Society of Edinburgh 83B, Proc Soc Antiq Scot 48, 52â€" Antiquity 77, â€" Blockley, S P E. Journal of Quaternary Science 19 2 , â€" American Geophysical Union 84 31 , Quaternary Science Reviews 24, Scottish Archaeological Review 5, 30â€"3. Edinburgh University Department of Archaeology: Mesolithic Miscellany 12 2 , 18â€" Mesolithic Miscellany 13 1 , 7â€" Report to Historic Scotland. Mesolithic site; post-ring structure. Mesolithic Miscellany 15 1 , Mesolithic Miscellany 16 1 , 2â€" European Journal of Archaeology 5 1 , 9â€" Newcastle upon Tyne, â€" Bos, J A A. Quaternary Science Reviews 26, Proc Soc Antiq Scot , Oxbow Books Oxbow Monograph Journal of Biogeography, 27, Proc Soc Antiq Scot 56, â€" Archaeology and Landscapes of the Ice Age. Journal of Quaternary Science 15, Brown, A G Alluvial geoarchaeology: Journal of Biogeography 11, British Archaeological Reports British Series Burkitt, M C Prehistory. Proceedings of the Prehistoric Society of East Anglia 5 1 , 16â€" Oxford Journal of Archaeology 28 4 , Proc Soc Antiq Scot 45, â€" Proc Soc Antiq Scot 61, â€" Proc Soc Antiq Scot 61, Candow, R Prehistoric Morton. Field Guide Quaternary Research Association: Journal of Field Archaeology 23 4 , Kegan Paul, Trench, Trubner and Co: Journal of the Royal Anthropological Institute 61, â€" Transactions of the Hawick Archaeological Society , Bulletin of the Geological Survey of Great Britain 37, Claassen, C Shells. Scottish Natural Heritage, Society of Antiquaries of Scotland Monograph 7: Proceedings of the Prehistoric Society 21, 3â€" Proc Soc Antiq Scot 89, 91â€" Scottish Archaeological Review 5, 35â€"7. Europae Archaeologiae Consilium Occasional Paper 1: Coles, J M Archaeology by Experiment. Proc Soc Antiq Scot , 11â€" Journal of Archaeological Science 36, â€" Lorn Archaeological and Historical Society:

THE MESOLITHIC I.G. SIMMONS, G.W. DIMBLEBY, AND CAROLINE GRIGSON pdf

3: Palaeolithic and Mesolithic Bibliography | ScARF

The Mesolithic Period in Europe has been a much-discussed area in archaeological research. As far as is known, the project reported herein represents the first attempt to visualise an otherwise inaccessible Mesolithic site with Virtual Reality (VR) technology, exploiting real geo-seismic data sources of the Southern North Sea.

Human Interface Technologies Team ALife Langton, ; Langton, is This paper describes early evaluations of simulated vegetation and environmental models using decentralized Artificial Life entities. The results demonstrate a strong feasibility for the application of integrated VR and Artificial Life in solving a 10, year old mystery shrouding a submerged landscape in the Southern North Sea, off the east coast of the United Kingdom. Through further experimentation and refinement of the Artificial Life rules, plus the integration of additional knowledge from subject matter experts in related scientific fields, a credible reconstruction of the ancient and, today, inaccessible landscape may be within our reach. Initial investigations revealed a large river valley from an ancient landscape dating back 10, to 7, years. At meters wide with an observed length of This significant finding of archaeological value raises important questions regarding the migration of ancient hunter-gatherer populations from mainland Europe. These explorers may have tread upon the landscape or even populated the regions of the river valley just before the flooding of the North Sea that drove settlements away and wiped living organisms off the once thriving landscape. Virtual Reality VR has been applied to many areas in the past to solve real-world problem domains. Over the past decade, as VR technology gained popularity in the domain of archaeology, networks of international organizations, notably the Virtual Heritage Network VHN, have evolved to promote the use of VR for the education, interpretation, and preservation of cultural and natural heritage as defined in UNESCO, Virtual Reality for Heritage is limited only by our imagination and effort in recreating worlds from the past and present that are either protected, such as Stonehenge Stone, , or inaccessible due to limitations of time and space such as the Shotton River Valley named after a famous British geologist Robson, Recently the Petroleum Geo-Services PGS, The datasets originally gathered for oil prospecting were handed to the Institute of Archaeology and Antiquity at the University of Birmingham UK and, with the help of the high-end computing facilities, researchers were able to investigate the basic topography of the river valley in contours and 3D voxel volumes. The result is a collection of 3D digital renderings, animations, virtual interactive explorations and semi-immersive displays. To date, the reconstruction of the submerged Shotton River and the manual placement of 3D representations of lifeless vegetation have so far provided an acceptable, yet basic glimpse to subject matter experts of how the landscape Figures 2 and 3 might have appeared 10, years ago. Location of the Shotton River Valley The aim of NSVP is not only to visualize the Mesolithic landscape with vegetation positioned according to expert opinions from geologists, archaeologists and environmentalists, but also to impart software-based Artificial Life ALife properties and algorithms into the virtual vegetation in the hope that, by simulating localized and dispersed growth patterns, reproduction, adaptation and competition, it may be possible to obtain a credible interpretation of the landscape in order to determine settlement patterns of the ancient inhabitants. As early as Reid, , the experienced geologist Clement Reid laid down his perception of the North Sea plain as a landscape which was available for human inhabitants. This hypothesis has received support from the findings of recent excavations in a similar latitude to that of the Shotton River Valley, where Mesolithic dwellings have been uncovered in the Northumberland and Dunbar regions of the British Isles Waddington, Continuing research Clark, ; Wymer, ; Coles, in the field of archaeology have also attempted to highlight or visualize the North Sea plain both as a land corridor and as a place which once supported human life. Some researchers in the field of VR and CGI seek to progress beyond visually compelling but essentially empty virtual environments to incorporate other aspects of physical 2 Presence 15 3 Special Issue on Virtual Heritage eventually support the development of a historical representation of the ancient landscape based on abstract characteristics of vegetation behaviors. Rietman Rietman, suggests that man-made systems that follow the biological stages of reproduction, metabolism, evolution, growth, selfrepair and adaptability can exhibit characteristics of life in nature. However, in practical implementations, not all ALife systems require the modeling of every aspect of biological life, but only that which is sufficient for problem solving. ALife has also been used in the reconstruction of the swimming abilities of extinct animals in the ancient seas Yoshiyuki, Others Refsland et al. The Environment Manager manages the initial settings of the Virtual Environment, such as the 3D terrain, temperatures, moisture, sunlight, and season, stored as an Ecosystem XML file. The Plant Manager manages the different species of plants with their 3D representation of the stages of growth from seed to maturity and characteristics of germination, growth, reproduction, competition and their adaptation to environmental factors. The Rendering Engine is integrated with the ALife engine, reflecting in real-time the state of growth of individual plants as they grow and compete for resources in their 3D representation. Figure 4 illustrates the interfaces of the system. These concepts are important in the way which vegetation behaviors can be modeled. By identifying the objectives of using ALife in problem-solving for archaeology, and by studying the preferences and behavior of vegetation â€" abstracting its prominent characteristics â€" it becomes possible to synthesize plant growth and reproductive behaviors in order to endow an otherwise barren landscape with a living forest that thrives within the confines of a simulated virtual environment. SeederEngine and Seeder Manager Interface The virtual environment in SeederEngine where the plants inhabit simulates environmental factors such as sunlight, moisture, temperature and its variation with altitude, soil type, nutrients, and levels of carbon dioxide present in the atmosphere. Each seasonal change in the virtual world is reflected by the variation in the environmental factors which simulates the climate in the Mesolithic settings. Each factor can also be disabled from affecting the environment to allow for a greater control during experiments. As the history of the landscape spans thousands of years, an adjustable timescale feature is included to speed up or slow down the processes for observations of the growing vegetation and its dispersal patterns. SeederEngine has the capability to integrate ALife behavioral components with the use of XML data describing the variable properties of life forms. The framework was built for the purpose of investigating and interpreting vegetation dispersal patterns within the vicinity of the Shotton River Valley. This VR test bed of artificial life may 5 Models of Vegetation-Based Artificial Life Artificial vegetations are modeled based on the characteristics of their natural counterparts. Competition for space amongst plants is dependent on the size and form of the plants tree, bushes and undergrowth and the distances between them. The rules ascribed to the virtual plants define their establishment in age and their largeness in size to be advantageous in competition to ones that are smaller. The adaptation decentralized approach Resnick, was taken in modeling the ALife entities so that each organism has an equal opportunity in the struggle for existence in the simulated environment with an expectation that emergent behavior Holland, ; Johnson, in terms of dispersal patterns in the landscape space will appear with their local interactions. Typical Vegetation Information in XML File rules of a plant also differentiate trees from shrubs and herbs, in that the latter will be more tolerable to crowded situations. Figure 5 illustrates the simple rules for competition and accessibility of nutrients in appropriate scenarios: ALife plant entity uses XML to describe the properties of growth, reproduction, adaptation, and seed germination. A typical XML file contains the information in Table 1. Each vegetation ALife entity possesses sensors to sense the environment including the presence of other plants and react according to its preferences. This ability defines the behavior of the plant. Listing 1 depicts the rules in a plant life-cycle in the Alife implementation: Scenarios of Competition among Plants for Sunlight, Space, and Nutrients In figure 5A, the smaller plant on the left are under full shade while the plant on the right receives partial sunlight. It is possible that plants under a forest canopy receive little to no sunlight. In figure 5B, the two groups of larger and smaller trees each compete with their neighbors for space. In this scenario, only overlapping plants compete with each other. Two groups of plants are depicted in figure 5C where the larger cluster naturally produces more nutrients than the smaller cluster in addition to a global nutrient level. The fitness of a plant is determined by the adaptability of a plant towards environmental factors and its competition with neighboring plants. The values gathered from sensing the environment and competition are measured by a tolerance function illustrated in Figure 6.

Each plant has an upper, lower, and ideal preference towards each environmental condition including the values gathered from competition with neighboring plants. If the condition is within the ideal range, the plant retains its fitness. Conditions not within the ideal range will have its level of fitness decreased to the eventual termination of the plant. In the seed stage sense the environment for suitability of conditions for germination 2. Increment age, interpolate size and change appearance: Compete with plants at proximity for sunlight, space, and nutrients 2. Sense seasonal changes for reproduction 3. If plant reaches maximum age or if fitness is depleted remove plant from the ecosystem Competitions among plants are local and based on their size and their tolerance to sunlight, nutrients, and space. The density and canopy collective leaves and branches size of a plant will directly affect the level of sunlight received by plants smaller in sizes. Nutrients are global and are drawn from local positions as well as decaying plants that are 4 Presence 15 3 Special Issue on Virtual Heritage Grigson, Figure 7 is a representation of the fitness and location of different species of plants red, green, blue, and yellow in two-dimensional virtual space. T1-T4 are screenshots from variable time steps. A graphic representation of the tolerance function At T1, the respective species begin to produce offspring. At T2, it is observed that parent plants and some offspring begin to die turning pale as a result of the environment. One species a single plant in T1 did not leave offspring due to unfavorable conditions. In T3, The global temperature was gradually increased and the plants began to migrate north due to the simulated effects of global warming. Three pilot experiments were conducted within the virtual environment based on the artificial Figure 7: Vegetation Dispersal and Migration due to Global Warming A plant species exceeded its lifespan but did not leave progeny, which resulted in its extinction. In the first experiment, the topology of the virtual environment was defined as a landscape increasing in elevation towards the far distant plane. This implies that, towards the top of the landscape, the temperature decreases proportionally at 0. Figure 9 shows a selection of screenshots from variable time steps T1-T8. The figures showed difference in brightness due to the variation of sunlight and season. Environmental conditions were set to a typical four-season cycle as experienced within the British Isles. The ecosystem conditions were set to be favorable to the growth, reproduction, and germination of the fern species. T1 in Figure 6 is the initial setting where some of the vegetation can be observed. In T2, the growing ferns began reproducing with some of the spores being dispersed far from the parent via environmental factors such as wind conditions. Wind dispersal is a naturally-occurring phenomenon in which plant seeds are disseminated in such a way as to avoid the progenies competing with the parents for resources in later stages of their life. T3-T4 shows that some of the progenies have germinated due to favorable conditions from the soil, temperature, sunlight, and moisture. Initial 3D representations of vegetation of different ages were placed in the landscape using the SeederEngine Manager before launching the engine for the experiment. Willows of different ages were situated around the landscape, two of which can be seen in T1. Ferns were scattered near the Willow trees. At T2, the Ferns did not leave offspring and were made extinct due to unfavorable conditions. The smaller sized Willow did not survive due to competition. Some of the Hazel seedlings can be observed as they germinate. Whilst some seedlings grew to become young trees T3 , others did not survive the environment and competition for space and sunlight from other plants T4. A Hazel seedling which sprouted near the Willow in the foreground T4 grew for some time T5 but did not survive competition from the tree and died later. At T6, the trees have grown larger and more seedlings A virtual landscape ten meters in width and length with a maximum height of two meters of elevation was established in the third pilot experiment. The size of the landscape was limited to this size for the purpose of simulating the competition among plants of different species and level of growth. Competition and reproduction among plants of different species are seen to germinate. At T7, some seedlings have died whereas others germinated and lived to a certain height before dying off. At T8, the old willow tree in the background expired as it reached its maximum lifespan leaving no offspring. Seeds produced by the plants could also be noticed to germinate if the conditions were right. Once germinated, the seedlings began their struggle to survive, initiating a new cycle of artificial life. This research explored the fusion of Virtual Reality and Artificial Life to solve a real-world problem domain, namely the Mesolithic reconstruction of the submerged Shotton River Valley. Whilst researchers in the distant past have attempted to visualize the appearance of the landscape by drawing upon known information and assembling the evidence from explorations, the visualization task has only recently become possible thanks to developments in computing hardware and accessible VR and ALife software and knowledge.

THE MESOLITHIC I.G. SIMMONS, G.W. DIMBLEBY, AND CAROLINE GRIGSON pdf

4: CiteSeerX â€” Citation Query The Mesolithic

P.J. Ucko, G.W. Dimbleby (Eds.), The Domestication and Exploitation of Plants and Animals, Duckworth, London (), pp. 59 I.G. Simmons Towards an ecology of Mesolithic man in the uplands of Great Britain.

Additional information about Studierstube, the full documentation as well as the newest versions can be found at [3]. It allows the blending, addition and subtraction of different animations thereby enabling the user to create large amounts of animations from a small list of original animations. The available documentations as well as a short introduction can be found at [2]. It is used within the ACF communications part to allow concurrent communication and execution of different threads and also to ensure that the ACF is platform independent. Further information can be found at [6]. Studierstube is needed to display the objects which are being manipulated with the BCI while the PIAVCA component is needed to manipulate the animation of the same objects. An avatar contains a skeleton that is defined by a list of joints. The joint list can vary in complexity and detail depending on the abstraction of the avatar compared to a real being or object. This skeleton can be used to move the avatar by using skeletal animations. The clear advantage of such an approach is that the skeletal animations can be reused for all avatars that use the same skeleton. A disadvantage however would be that it might be needed to recalculate all vertex positions on the fly. The previously mentioned joints within the joint list have an orientation and position. The orientation saves the angle and rotation axis of the joint while the position determines the overall position of the joint within the avatar. By manipulation of the joint orientations it is possible to move the limbs of the VR avatar and thereby enable it to execute specific movements. The motion moves a limb attached to the targeted joint to a user-specified angle on a user-selected axis by actually rotating the joint itself. The user inputs only one of the 4 possible movement directions: These directions are then used to determine the axis along which the chosen joint will rotate. A track is a list of keyframes of the aforementioned variables that define in space and time the progress of the motion from its starting point to the endpoint. The more keyframes we have in that list the smoother the motion will be. The naming of the motions depends on their purpose. GenericMotion class diagram with 2 example motions 2. To avert this, we inherit all specialized classes in the ACF from a parent class called GenericMotion as shown in Figure 2. Because all other ACF motion classes inherit the GenericMotion class, they are able to call the constructor of GenericMotion as in Figure 3, allowing it to initiate the motion without having redundant code in the framework. A generalized example of how the motions call GenericMotion Another issue with the joint name was that the user would have to know the correct form of it which PIAVCA reads from the avatar input file. This would have complicated the use of the ACF because it can be tedious to find the joint name. The following generalized joint names are currently used: These classes then call the GenericMotion constructor which executes the motion. They also decide if the left or right joint will be moved and what motion type will be used according to the parameters received from the communications part of the framework. The relative motion moves a joint by incrementing or decrementing its current rotation angle while the absolute motion type moves the joint to an absolute angle with no considerations of the current rotation angle. PIAVCA resets the joints orientation after conducting a motion to its default position and at the joint initialization its direction and orientation is random. Therefore the ACF contains a special register which stores the joints orientation data and is updated each time a joint moves. That register allows the ACF to perform absolute and relative motions. Currently all of the joint-related motions support both types. The miscellaneous motions however do not support the relative type. Two of these control the location and the orientation of the avatar within 3D space while the third one resets joints to their predefined orientation. The ACF supports 2 ways of navigating within the 3D environment. The first is moving the avatar and animating it to give the illusion that he walks while the other one is sliding the avatar to its destination. The ResetJoints class is used to reset joints to their resting position. It can reset the joints to that position or it can store a desired resting position for each joint for future use. In order to be able to do all of the above tasks in parallel it uses the ACE framework components for concurrent computing. This part of the ACF runs in a separate thread mainly to prevent program lockups caused by the receiving of data and also to make sure that currently running motions are not interrupted by the newly received motions. The basic principle of the communications part is as follows. First it checks if any UDP packets were received. These packets are nothing more then basic strings which are terminated with a semi-colon. Then it parses the command out of the packet and executes the command. When the appropriate action based on the received command has been executed the framework sends feedback back to the BCI about what actions have been performed. The command part tells the framework what to do while the data part provides the necessary parameters for the execution of the command. The generalized syntax for the UDP protocol is: If they are not separated with a period the framework will ignore that command and read a new packet from the socket. It is very important to point out that every packet apart from playMotion that must be terminated by a period, has to be terminated by a semi-colon ; or the aforementioned parser will not be able to parse and execute the command. The framework builds a python command string from the received UDP packet and pushes it onto the motions stack. When the playMotion command is received all the motions from the stack are popped from it, combined and executed. If other generalized joint names are needed then their appropriate motion classes will need to be constructed first and the serverThread updates as explained in section 3. It can be either R for relative or A for absolute. The shorter the duration parameter the faster the motion will be animated. The duration parameter also influences how long the communications part of the ACF will be put to sleep Example: The parser retrieves the name of the avatar for which the python command is meant for and then retrieves and sends the whole python command for execution. REL This example orders the avatar named bill to play the motion called motion1 2. The protocol is a bit different here then because the first parameter within the data part tells the parser if the avatar needs to be moved or rotated. When the parser knows which motion it has to execute exactly it builds the corresponding python command string and saves it on the motions stack. It is important to point out that if we want to move the avatar on a horizontal plane then y must be 0 while x and z can vary. This command is executed directly when the parser assembles the appropriate python command in string form. It contains pairs of generalized joint names and indicators on which body side the joints are located separated by commas e. It is important to point out that the last name-indicator pair must also be terminated by a comma and that no blank spaces must exist between the comma and either the indicator or joint name. If we want to either reset or save a new reset orientation for all joints in a given avatar then we simply write All as the joints parameter resetFlag - is a simple string which is either true or false and determines if the joint will be reset to its reset orientation or if a new reset orientation will be saved for the target joint. Vec x, y, z is our desired rotation axis Example: Vec 0,1,0 ; This command resets the left upper arm joint and the right hip and wrist joint to a predetermined rotation. Note that the Quat â€¦ parameter has no function here. Vec 0,1,0 ; This command changes the current reset orientation to the one defined in the Quat â€¦ parameter. Note that the reset command should be called after the playMotion command. It takes all the motions in the motions stack, adds them to a single complex motion and sends them to be played. Before the parser returns to the UDP receiving socket to get a new UDP packet it is put to sleep for the sum of the durations of tall the combined motions. This approach ensures that all motions will be correctly played and that they will not be interrupted before they are complete. The result of executing the example detailed in section 2. The resulting pose will be the same as the one given in Figure 4. It is important to point out that contrary to the rest of the UDP packets this one needs to be terminated like a command by a period and not a semi-colon. The issue with the naming is that identical joints can be named differently on different avatar models. Its format is as follows: When introducing a new joint: In this phase the ACF is capable of playing all of the required motions correctly. It is also capable of executing relative and absolute motions, moving and rotating one or multiple avatars within the 3D environment and combining an unlimited number of motions. Some examples can be seen in Figure 5. Examples showing a few motion combination possibilities: This however can be easily changed by some minor customization. Another minor issue is that there are no limits on moving the joints which can lead to some awkward poses. Acknowledgements I would like to thank my supervisor Alessandro Mulloni for his excellent tips and help given during the development of the framework. I would also like to thank Robert Leeb and Prof. Dieter Schmalstieg for clearly stating the requirements and comments on the development of the Framework.

5: Dr J.B. Innes - Durham University

The Domestication and Exploitation of Plants and Animals by G. W. Dimbleby The domestication of plants and animals was one of the greatest steps forward taken by mankind. Although it was first achieved long ago, we still need to know what led to it and how, and even when, it took place.

Show Context Citation Context As can be seen, the observed variability of gro Later prehistoric environmental marginality in western Ireland: To lift the lid of the peat And find this pupil dreaming Of neolithic wheat! When he stripped off blanket bog The soft-piles centuries Fell open like a glib: There were the first plough-marks, The stone age fields, the tomb Corbelled, turfed and chambered, Floored with dry turf-coomb. A landscape fossilized, Its stone wall patterning Repeated before our eyes In the stone walls of Mayo Before I turn to go He talked about persistence, A congruence of lives, How, stubbed and cleared of stones, His home accrued growth rings Of iron, flint and bronze. So I talked of Mossbawn, A bogland name. Such acidification wassconventionally believed to have occurred in late interglacial times, when soils were fullysmature e. Andersen though arguments have been made for earlier degrada Early Holocene loessic colluviation in northwest England: Lord, Mattw Telfer, Peterwilson " Twelve new samples of loessic silts from widely spaced locations on the karst uplands of northwest England have yielded Optically Stimulated Luminescence OSL dates that fall within or overlap with within uncertainties the early to mid-Holocene period Nine of the 15 dates are coincident with the hypothesized climatic deterioration at 8. There is no substantive archaeological or palynological evidence for Late Mesolithic hunter-gatherers having had a major impact on the landscape, and it is considered highly unlikely that these people triggered colluviation. We estimate that during the 8. It is inferred that there was greater snow accumulation in winter, that the snowpack survived for longer periods, and that there was an increase in the magnitude and frequency of frost-related processes and meltwater flooding. Together, these changes in climate and their associated sub surface processes were responsible for the reworking of the loess. Furthermore, other geologic proxies for climate change are sparse, particularly for the Holocene, which is well illustrated byMayewski et al. This paucity in paleoclimatic data is partially due to the logistical and the Himalaya and Tibet. Unless otherwise stated all radiocarbon ages have been converted to calibrated years using Reimer et al. This paper builds on several recent research and review papers that focus on the Quaternary glacial geology of Central Asia, including three volumes of Quaternary International Owen and Show Context Citation Context However, it has long been recognized that the timing of the Hypsithermal varies regionally, for example, in Britain it spansw8. Holocene glacial succession for Muztag Ata and Kong compared with multiple paleo Holocene after Seong et al. The light gray bands indicate times of rapid climate c core MC The Shotton River and Mesolithic Dwellings: Silberman editors, Robert J. The Mesolithic Period in Europe has been a much-discussed area in archaeological research. As far as is known, the project reported herein represents the first attempt to visualise an otherwise inaccessible Mesolithic site with Virtual Reality VR technology, exploiting real geo-seismic data source As far as is known, the project reported herein represents the first attempt to visualise an otherwise inaccessible Mesolithic site with Virtual Reality VR technology, exploiting real geo-seismic data sources of the Southern North Sea. This paper presents the techniques and technology used in reconstructing an ancient river valley discovered while gathering seismic data for petroleum in the North Sea. The virtual landscape reconstruction is populated with vegetation types based on pollen records of the same period in nearby region, and 3D models of Mesolithic dwellings have been grouped into villages and positioned near possible settlement areas. This paper also describes the various software applications and hardware used for implementing the high-quality static models and the high-performance interactive world, the latter intended for delivery via the WWW and multimedia for educational purposes.

THE MESOLITHIC I.G. SIMMONS, G.W. DIMBLEBY, AND CAROLINE GRIGSON pdf

6: hfglen's author cloud | LibraryThing

12 I.G. Simmons, J.B. Innes, Mid-holocene adaptations and later Mesolithic forest disturbance in Northern England, Journal of Archaeological Science, , 14, 4, CrossRef 13 R. S. CLYMO, D. MACKAY, UPWASH AND DOWNWASH OF POLLEN AND SPORES IN THE UNSATURATED SURFACE LAYER OF SPHANGNUM-DOMINATED PEAT, New Phytologist, , , 1,

This dynamic and wide-ranging complement of materials for Mesolithic people in Scotland. However, species represented a vital natural resource, which was most Mesolithic sites in Scotland contain scant evidence available for exploitation by humans colonizing Scotland of the mammals that were exploited locally. In contrast, as hunter-gatherers in the Lateglacial or Early Holocene. Not only did they provide a large and climate warmed at the end of the last Ice Age; up to 23 valuable source of food, but they also provided materials species of terrestrial and freshwater mammals from the for making clothes, shelters, tools, and even medicines. Buckland , which are now known to have existed in The reasons for this disparity between the fossil and Scotland from the fossil record Kitchener Recent archaeological records are discussed. In Scotland most developments in our knowledge of the faunal history of Mesolithic sites with faunal remains are coastal shell the early Postglacial period have been possible through middens, which may not be sites where mammals were AMS radiocarbon dating of existing museum specimens routinely hunted and their carcasses processed. This new hence cannot reflect the Early Holocene fauna, which information allows us to take a critical view of the faunal included cold climate species that had survived from remains found at Mesolithic sites in comparison with the the Lateglacial. Many areas have acid soils in which known fossil record. The fact that larger mammals larger mammals, because these were most likely to be may have been processed at the kill site, and that some exploited by humans and the fossil record of mammals mammals were exploited for their skins, further reduces in Scotland is complete enough for a thorough compar- the chances of their survival in the archaeological ison to be made Kitchener Birds and molluscs record. It is likely that all of these factors larger number of species, and in the case of birds have contributed to the impoverished mammal fauna of potentially greater mobility, create greater uncertainty the Scottish Mesolithic. In this paper we review the diversity and chronology Introduction of the large mammal species that lived in Scotland during the Early Holocene. We discuss the uses of mammals by The Early Holocene had a biodiversity unmatched in hunter-gatherers and how this may have influenced what any subsequent period as Arctic faunas and floras were survived in middens. As the woodland cover In this review we have restricted the species that were of Scotland developed over the next few thousand years available for human exploitation to those with a body Tipping , the fauna changed to reflect this. The weight of more than grammes. This excludes most wild horse probably became extinct in Britain during small rodents and insectivores, but recognizes that some the Mesolithic Clutton-Brock ; Yalden , 78 smaller species may have been exploited for fur e. Of these early mammals, only the mountain water vole, Arvicola terrestris. Smaller mammals may hare has survived until today as a relict species on high occur in middens purely incidentally as, for example, ground. Red after human occupation e. We deer probably colonized Scotland at the beginning of the have further divided the mammal species into terrestrial Holocene; a set of red deer antlers from the Meadows and freshwater mammals that would have been hunted of Edinburgh has recently been radiocarbon dated to routinely mainly away from the coasts, and marine c. This species survives on open hillsides either seasonally e. Although we now have a greater insight into the The aurochs Bos primigenius was also an early colo- chronology of Scottish mammals during the Holocene nizer, recorded from c. Recently, Harwood, have adapted to more open habitats where grazing was Kitchener, and Murray unpublished research carried possible. It survived in Scotland until at least the Bronze out a cluster analysis on more than bone frag- Age; the most recent date is from a skull from Galloway ments from different strata in the Creag nan Uamh caves, at c. This analysis suggested that there were three distinct faunal assemblages. One cluster was dominated We can infer from their later survival into historic times by reindeer Rangifer tarandus and was associated with that wolf Canis lupus and wild pig Sus scrofa were stony deposits of Late Pleistocene age, while another also present throughout the Mesolithic. The third cluster consisted of a mixed Some Mesolithic mammals were once believed to group of species dominated by both reindeer and red have survived only just into the Holocene, including deer, which may have arisen through bioturbation by the moose or elk Alces alces and the lynx Lynx badgers Meles meles , rabbits Oryctolagus cuniculus , lynx , suggesting that habitat change due to climatic and humans Homo sapiens ; alternatively, it may repre- amelioration or over-hunting by Mesolithic people led sent a very early Holocene assemblage reflecting the to their extinction Clutton-Brock ; Jenkinson transition from Arctic to temperate species. A series of ; Simmons et al. Although a forest species, AMS radiocarbon dates on key species within these clus- the moose is dependent on willow Salix spp. However, recent radiocarbon dates Terrestrial mammals for both species show that they survived well beyond During the Lateglacial and very early Holocene the Neolithic period Table 5. However, two other pieces of evidence landscape was dominated by treeless tundras and open for the later survival of the moose are highly dubious. Arctic fox, Alopex lagopus? Given that habitat changes would have Also, a carving on the wall of the now destroyed Michael made some species unlikely to be contemporaneous, the Cave at Wemyss, Fife Fig. Many smaller species of mammals that survive Marine mammals today were also available for exploitation by Mesolithic The fossil record of marine mammals, especially the peoples. Although fossil remains may be rare, we can smaller cetaceans, is very poor. In part this is because infer their survival from their present occurrence and of rising sea levels since the end of the last Ice Age, their ability to survive in habitats that were present in the which mean that stranding sites may well now be inun- Early Holocene. These mammals are also listed in Table dated. Also cetacean bone is mostly cancellous and its 5. Therefore, in summary, Mesolithic hunter-gatherers structure would not normally be suited to long-term could choose from up to 23 larger mammal species as preservation. This is the crown of a very large aberrant red deer antler. The animal has been interpreted as a large ungulate, but we suggest that it represents a seal. Reproduced with permission from Volume 67 of the Proceedings of the Society of Antiquaries of Scotland However, based on recent observations of stranded porpoise, Phocoena phocoena as the climate warmed cetaceans and records of vagrant seals, a great variety of during the Early Holocene. Some smaller cetacean species dolphin, Stenella coeruleoalba Reid et al. Islands and was formerly practised in Shetland, but there In part this is due to better recording, but also is no evidence for this during the Mesolithic. Some seal it may reflect rising global temperatures. It is likely that, which is now confined entirely to the Pacific Ocean, apart from grey seals, most usage of marine mammals but which survived in the Atlantic until the 17th century would have been opportunistic from strandings. Lack of suitable reference material We would expect that, as with terrestrial mammals, in Scottish museums means that this species may be Arctic species e. It is essential for beluga, Delphinapterus leucas; ringed seal, Phoca future research that a grey whale skeleton be acquired by hispida would have been replaced by temperate species the National Museums of Scotland for comparison with e. Ringed seal, Phoca hispida Beaked whales 4 species? Harp seal, Phoca groenlandica? Hooded seal, Cystophora cristata? Bearded seal, Erignathus barbatus? Pygmy sperm whale, Kogia breviceps? Bowhead whale, Balaena mysticetus Rorquals, Balaenoptera spp. Many ungulate species were undoubtedly suggested that whale bone was used opportunistically hunted for food, but could also be exploited for raw as a substitute for wood during the Iron Age. However, materials, including hides, bone, antler, and sinews. It is important to bear in mind the different ways in Most carnivores and possibly the red squirrel, Sciurus which various mammal species would have been used by vulgaris were probably exploited for fur, which would hunter-gatherers, since this would affect which parts, if have greatly limited their potential for preservation in any, of the animals were preserved at archaeological sites the archaeological record. It is likely that fur-bearing compared with the fossil record. Therefore, at most, the only skeletal elements that might survive in The archaeological record of mammals in the skins would be foot bones, since these may be retained in Mesolithic the skin. Although these Clark and Ringkloster Andersen , which coastal sites are mostly shell middens and, hence, are may indicate that similar sites have not yet been located dominated by a wide variety of mollusc species, they in Scotland. As well as meat and fur, the beaver was often contain some mammal bones. Castoreum at the key Mesolithic sites in Scotland. The species most contains a chemical similar to salycylic acid, which often represented are red deer, wild pig, and roe deer. The presence of carnivores at An Lynx remains were found at Mesolithic sites in Oban Corran and in the Oban caves may indicate that these and on Ulva. In the former case, we know that the lynx species were exploited for fur. In particular the heavily dates to the period of Mesolithic occupation, though its eroded, left proximal phalanx posterior from an adult presence was probably unrelated to human activity, but brown bear at An Corran Bartosiewicz forthcoming is in the latter case we have no idea yet of the age of the highly suggestive that this was all that remained from lynx remains. Although the decorative use of a bear claw There are many mammals that are simply missing corresponding to the distal phalanx cannot be ruled out, from Mesolithic sites, including moose, reindeer, wild it is unlikely that an entire toe including the proximal horse, beaver, polecat, wolf, arctic fox, and stoat. Star Carr , so its Table 5. Bioturbation and other factors make it possible that not all of these faunal remains are of Mesolithic age. Where there is uncertain contextual association, only direct radiocarbon dating of the bones would resolve any uncertainties. The beaver was For example, meat could have been dried or smoked an important species in later periods, but it too is absent and cut into manageable pieces for easier transport from Mesolithic sites. Thus much of the skeleton would not be taken from the kill site. Also, species that are exploited for their fur would be skinned at the kill site and the Discussion carcass left behind if it had no use as food or other materials. Again, there is little chance of any skeletal From the evidence presented in this paper, it is clear that elements being preserved as a record of human exploita- there are major differences between the known mammal tion beyond the kill site. Even where skeletal elements fauna of the Mesolithic and the species represented at occur, the highly worked nature of the bone fragments archaeological sites. The most abundant species at the may make their identification impossible using current archaeological sites were red deer, wild pig, and roe methods and so mask the true species composition of a deer, and they clearly represent sources of bone for tool- midden. For example, at Morton less than seven per cent making as well as important sources of food, exploited of the mammal bone could be identified to species level even today. Other species appear only sporadically at Coles It is easy to see how slivers of long bone different sites and some may well occur there inciden- from red deer, moose, and aurochs would be impossible tally rather than resulting from human hunting. Perhaps extracting DNA from some of these then has caused these differences between the palaeonto- samples would allow a better appreciation of the species logical and archaeological records? A major reason is that the sites in which faunal mate- Foraging efficiency may also provide an explanation rials survive are probably not representative of human for the limited range of species recorded at Mesolithic hunting activities during the Mesolithic. Smith , 12â€”16 calculated that a population were not necessarily attached to settlement sites. Many density of eight reindeer per km2 was needed to support may represent special-purpose camps where molluscs a typical hunter-gatherer human population density of were gathered and processed along with some line fishing 0. The occurrence of large mammal bones people lived at 20â€”60 per cent of their carrying capacity. Using recent data on population densities of Shell middens also benefit from favourable pres- deer and wild pig species, and their typical body masses, ervation conditions. In the few English worthwhile species to hunt. These occur at high popula- examples of inland open-air Mesolithic sites with well- tion densities and could provide a great deal of food for preserved faunal assemblages, such as Star Carr and Mesolithic hunters. However, moose occur at very low Thatcham Clark ; Wymer , it is notable that population densities. Even though the highest biomass the animal remains include many of the mammals e. Moreover, all Scottish Mesolithic sites that have Therefore, it is possible that Mesolithic hunters did animal remains are dated to the Later Mesolithic, so that not develop hunting strategies for moose, because other exploitation of Arctic species from the Earlier Mesolithic species were more abundant and more easily encountered. England but only very early in the Mesolithic and A further possibility is that larger mammals would Europe Smith ; Yalden In some parts of its have been processed at the kill site and all usable mate- Holarctic distribution today local population densities of rials extracted and preserved before being taken away. In addition, unless evidence for in the Mesolithic of western Scotland. Pollard and hunting is available in the form of frontal bones attached A. Morrison eds , The Early Prehistory of Scotland, to antlers, the possibility should be considered that cast â€” AMS through active hunting Choyke , , tab. Cziesla, It is conceivable that all the possible explanations T.

THE MESOLITHIC I.G. SIMMONS, G.W. DIMBLEBY, AND CAROLINE GRIGSON pdf

7: A Software Framework for Controlling Virtual Reality Avatars via a - www.enganchecubano.com

Simmons, I.G., Turner, J. & Innes, J.B. (). An application of fine-resolution pollen analysis to Later Mesolithic peats of an English upland. An application of fine-resolution pollen analysis to Later Mesolithic peats of an English upland.

Vegetation history in the North-West of England: West eds Studies in the vegetational history of the British Isles, The effect of man on the environments of north-west England: The effect of man on the landscape: The highland zone, Council for British Archaeology Research Report National Museums and Galleries on Merseyside. Nevell editor Living on the Edge of Empire: Models, Methodology and Marginality, An Archaeological assessment of land east of Telegraph Road, Irby, for golf-course development. Unpublished Report, Liverpool Museum. The Neolithic Cultures of the British Isles. Journal of Archaeological Science 6, Stone axe factory sites in the Cumbrian fells. Transactions of the Cumberland and Westmorland Archaeological Society 62, Greater Manchester Archaeological Journal 2, Excavations at Skelmore Heads near Ulverston, and The Tumulus at Skelmore Heads near Ulverston. Megalithic Enquiries in the West of Britain. Proceedings of the Prehistoric Society 37, Neolithic and Bronze Age sites. Harding eds Past Present and Future: The Archaeology of Northern England, Archaeological landscapes of the Cumbrian uplands: A Mesolithic Structure at Sheldon; with a note on chert as a raw material on Mesolithic sites in the Southern Pennines. Derbyshire Archaeological Journal 87, Proceedings of the Prehistoric Society 30, Stone implements lately found at Portinscale, near Derwentwater. Proceedings of the Society of Antiquaries 2nd series 19, Carrock Fell, Caldbeck and Mungrisdale, Cumbria. Skelmore Heads, Urswick, Cumbria. Howe Robin, Crosby Ravensworth, Cumbria. Current Archaeology , Richardson, C. The place names of Roman Britain. Mellor â€” A new Iron Age hillfort. Current Archaeology , Implement Petrology in Cheshire. Cheshire Archaeological Bulletin 4, 6. Stamford Bridge SJ Cheshire Archaeological Bulletin 10, Typology of stone implements with shaftholes. Cummins eds Stone Axe Studies, Transactions of the Historical Society of Lancashire and Cheshire 50 for , British Museum Occasional Paper Cheshire Archaeological Bulletin 2, Excavation of a Circle at New Farm, Henbury. Transactions of the Lancashire and Cheshire Antiquarian Society 78, Cheshire Archaeological Bulletin 3, Journal of the Chester Archaeological Society 60, Astronomy in Prehistoric Britain and Ireland. Scientific Rambles Around Macclesfield. Proceedings of the Prehistoric Society The Pleistocene exploitation of Cumbria: A review of the evidence. The Prehistoric occupation of Blenkett Wood, near Allithwaite. Environmental Archaeology of the Peckforton Hills. Cheshire Archaeological Bulletin 8, Tooley eds The Environment in British Prehistory, Mid-Holocene adaptations and later mesolithic forest disturbance in northern England. Journal of Archaeological Science 14, Recognising and Reconstructing Prehistoric Landscapes: A tumulus at Mecklin Park, Santon Bridge. Searching for the Structure of Settlement Patterns. Current research from Britain and Ireland, Leicester Archaeology Monographs No. Stallibrass, S Review of the vertebrate remains. Stallibrass eds Plant and vertebrate remains from archaeological sites in northern England: Mesolithic Sites on the Pennine Watershed. Greater Manchester Archaeological Journal, 3 for , The Prehistory of Saddleworth and Adjacent Areas. The Saddleworth Archaeological Trust. A ring cairn in Levens Park. Scottish Archaeological Forum 4, Some Prehistoric remains in north Lonsdale. Radiocarbon Dates for the Pennine Mesolithic. Tree remains in southern Pennine peats. Ecology and Landscape Development: A History of the Mersey Basin, Journal of Ecology 60, Rowley-Conwy eds Whither environmental archaeology On the discovery of prehistoric remains at Clifton, Westmorland. Megalithic sites in Britain. To Here from Eternity: Manchester airport second runway. Rescue News 75, Proceedings of the Prehistoric Society 52, Palynological evidence for the Mesolithic-Neolithic transition in Cumbria. Walden eds Cumbria Field Guide, Geographical Journal , The Geomorphology of North West England, Proceedings of the Prehistoric Society 58, Neolithic Studies Group Seminar Papers 2. A Beaker burial in Levens park. A Cumbrian Bog Body from Scaleby. Recent research into British bog bodies. Scaife eds Bog bodies: New Discoveries and New Perspectives. Antiquaries Journal 18,

THE MESOLITHIC I.G. SIMMONS, G.W. DIMBLEBY, AND CAROLINE GRIGSON pdf

Excavations of the Castle Ditch, Eddisbury

THE MESOLITHIC I.G. SIMMONS, G.W. DIMBLEBY, AND CAROLINE GRIGSON pdf

Daphne Bigelow and the spine-chilling saga of the snail-encrusted tinfoil noose College geometry textbook Now Its My Turn To Bitch A shot of laughter The Impact of Enforcement on Street Users in England When the wood is green. Critical thinking brooke noel moore 9th edition Permutations of a twelve-tone row, by G. Lefkoff. Workshop receipts. Best practices in logistics and supply chain management Encyclopedia of birds Fundamental of electric circuits 3rd edition India My beloved charioteer Shashi Deshpande Unlikely Environmentalists Questions To Ask Before Marrying (Red Dress Ink) Holy places of the British Isles 12 Practice Tests for the SAT 2007 Psychodynamic therapy for adults Harold S. Kudler . [et al.] Macroeconomics plus MyEconLab plus eBook 1-semester Student Access Kit (6th Edition (MyEconLab Series) Teachers resource guide for General woodworking The Prometheus question, a moral and theological perspective on the energy crisis H.R. 12000, 12001, 21322, Competition of Penal Labor Esl basic business writing course A Light in the Shadow Prohibition and potency Islamic short stories in urdu Programming Assignment 9 Aces Algebra 2-Trig. CD Software Exambusters Study Cards Why do some websites use flash to Singing an old favorite Investigations in the United States Sciences basic to psychiatry Fairfax, Vienna, Reston, Herndon, Virginia, EasyFinder Sun One Studio 4, Community Edition Tutorial What language do bears speak short story Index to fairy tales, 1978-1986 Pierre Janet on hallucinations, paranoia, and schizophrenia Andrew Moskowitz .[et al.] Code of the monarch Application of lightweight concrete Story of the discovery of the New world by Columbus.